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From the Editor's Desk

The winners of the 2014 Australian Orchid Foundation Essay Prize were announced at the Annual General Meeting of the AOF held in Melbourne on 26th October 2014. First prize was won by Yin & Sau-wan Chan from Beecroft in New South Wales, who are very enthusiastic members of the Sydney Group of the Australasian Native Orchid Society (ANOS). They wrote about the Flying Duck Orchid, *Caleana major*, and their paper and photos appear as the feature article in this issue. Second prize was won by Jan Robinson with third prize won by Myra Chalmers with her personal story on *Rhyncholaelia digbyana*, which was previously well known as *Brassavola digbyana* at the time. Ironically, the topic was "My Favourite Orchid", a theme we have covered with quite a few articles in the *AOR* over the past few years.

The essay topic for 2015 is "How do you manage your orchid collection without relying on artificial heating and/or cooling?" More details can be seen on page 63.

We have had a most positive response to the coverage of *Sarcochilus* hybrids in the past couple of issues of the *AOR*. Ray Clement of Tinonee Orchid Nursery tells us about a novelty "sarc" hybrid that has been in bloom for well over 12 months on the same flower stem!

In July 2012 I spent a week in California, USA primarily for the Orchid Digest Speakers Day. I visited a number of nurseries and private collections during my brief but productive stay. In this issue I share some of the wonderful slipper orchids I saw in bloom at Fred Clarke's nursery, Sunset Valley Orchids. Other nurseries and private collections will feature in future issues. Showcasing a range of genera, with both species and hybrids.

Sam Cowie continues his Road Tests, with a new *Miltoniopsis* hybrid going under the spotlight. Andy Easton reminds us to look carefully at "*alba*" forms of species, especially if you intend breeding with them. I talk about and illustrate a rare colour form of *Dendrobium hercoglossum*. We also showcase some of the major entries of the 2014 Orchid Photographic Competition now held annually in Melbourne, Victoria.

The Australian Orchid Council's Conservation Officer, Alan Stephenson delivers some positive news regarding the potential plight of *Diuris ochroma*, and also discusses the problems with controlled "hazard reduction" burns.

David Jones and Chris French describe another three new terrestrial orchid species from Western Australia with Bob Bates describing a new pink *Caladenia* from South Australia. The *AOR* continues to publish the latest in Australian native orchids and their hybrids.

Remember you can renew or extend your subscriptions to the *Australian Orchid Review* on our secure website at www.australianorchidreview.com.au

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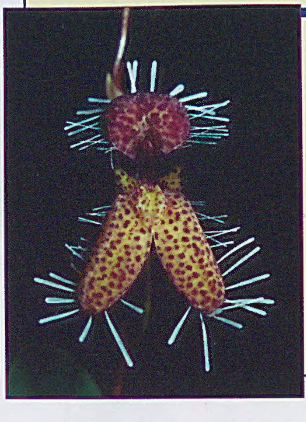
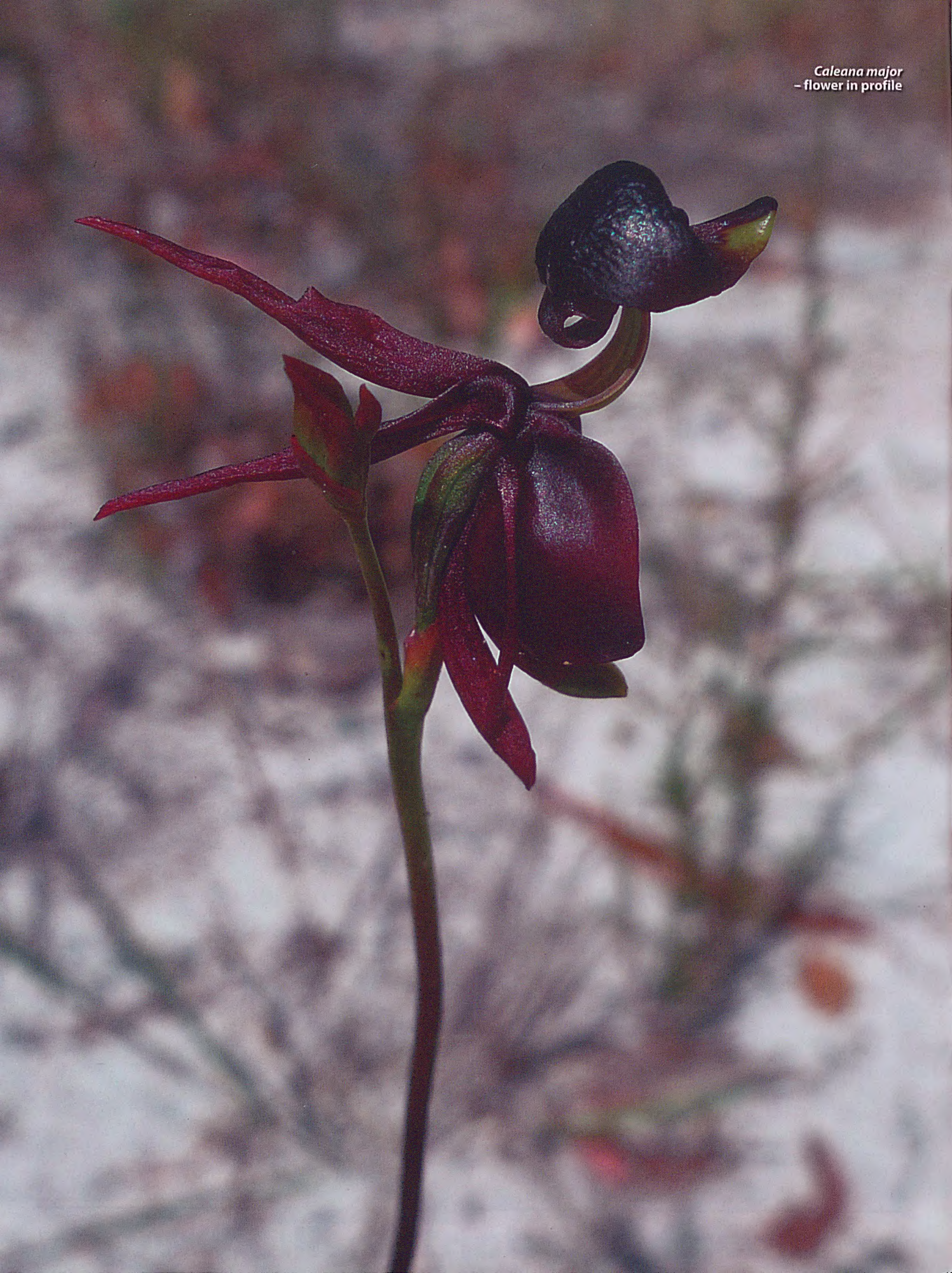


Cover Shot

Stelis ornata is a miniature orchid species from Central America that was previously misinterpreted for many years as *Pleurothallis schiedei*.

(Plant and photo: Dieter Weise, from the 2014 Melbourne Exhibition of Orchid Art and Photography)



Caleana major
– flower in profile

Our Favourite Orchid The “Flying Duck Orchid” - *Caleana major*

Text and photos by Kwong Yin and Sau-wan Chan

It all started with the arrival of an email from Sau-wan's sister who lives in Hong Kong with an article about the Flying Duck Orchid – *Caleana major*. The article contained lovely pictures of this orchid taken from different angles. It stated that this orchid from Down Under was as unique to the Australian flora as the kangaroo and platypus were to the Australian fauna. The orchid even had a stamp from Australia Post released in its honour! The email ended with the question asking us if we had seen the orchid. This really presented a serious challenge to us and we were both embarrassed and curious by this - embarrassed because of the fact that we had neither seen nor even heard of this orchid after having lived in Australia for nearly 40 years.

We love the Australian bush and regard ourselves as having at least above average knowledge of Australian flora and fauna amongst our friends. By then we had started growing orchids as a hobby (Sau-wan's sister knew about this and regarded us as experts on orchids) and we were members of two orchid societies including The Australasian Native Orchid Society (ANOS Sydney Group) which we had just recently joined. “If the Flying Duck Orchid is so unique and has such a reputation overseas, how come it has evaded us for so long?”, we found ourselves asking the question. We decided that we had to do something about this orchid ourselves. This started our two-year quest for finding out more about this orchid!

We started by making enquiries about the Flying Duck Orchid amongst our orchid friends. To our surprise, many had neither seen nor heard of this orchid, and for the few who had actually seen it, we were told it was an impossible orchid to cultivate because of its dependence on some special fungi. That at least explained why we had never seen this orchid in shows and nurseries. To see this orchid for ourselves, we realised we had to find it in the bush, in its natural habitat. According to the orchid books, it is regarded as a rather common orchid with wide distribution in eastern Australia, Queensland, New South Wales, Victoria, South Australia and Tasmania.

In the first year, we visited reserves and nature parks in our neighbourhood on a regular basis, looking for orchids. We also joined the orchid excursions organised by our orchid societies to different parts of Sydney and countryside NSW. A whole world of terrestrial orchids was open up to us. Even in the local reserve not far from where we live, we discovered large colonies of different species of *Pterostylis*, *Acianthus*, *Corybas*, *Cyrtostylis*, *Thelymitra* and others. This was amazing as these orchids were found growing in places we often frequented but failed to notice until then. In the various excursions, we saw more terrestrials and epiphytes, like *Dockrillia linguiformis* growing on the rocks, different species of *Caladenia* often found just by the roadside and *Diuris* species with yellow-coloured flowers in close association with many pea flowers and the various *Chiloglottis* species with parts of the flowers resembling female wasps. By the end of that year, we still failed to locate the Flying Duck Orchid. However, we had a very rewarding year as our knowledge of terrestrial orchids increased. This orchid has led us into the real world of native orchids, enabling us to see them in their natural habitats and to marvel at their amazing abilities of adaptation for survival.

Next year, we had better luck and saw the Flying Duck Orchid in three separate locations. Firstly, we were shown a small colony of the orchid in a regional forest reserve by the park ranger, Alf. He was introduced to us by a friend of ours who knew Alf very well as both of them were members of a “Friends of the Reserve” group that were spending weekends building a better track through the reserve for visitors. Alf, according to our friend, was “married to” the reserve, spending a lot of his spare time on different projects improving the reserve. It seemed to us that he knew all the plants in the reserve, where exactly they could be found and why they were special. Alf first eyed us suspiciously and then told us quite bluntly that he didn't like people from orchid societies because of his previous bad experience with them. Apparently he had previously given tours of the reserve to members of orchid clubs and soon after every tour, various orchids were dug up and he had sworn not to entertain such request anymore in future. We suspected it was out of the friendship with our friend that Alf made an exception and took us to see the Flying Duck Orchid, a small colony fairly close to the roadside of the reserve. It was early in the season and so we only saw a few emerging leaves of the orchid plants. The leaves were not green but had this rather unusual pale brownish colour and lay fairly prostrate to the ground amongst the litter. They blended so well with the surrounding that it was nearly impossible to be spotted unless you knew what you were looking for. We were excited by this promising lead and planned to return to see them at flowering time. We went back to the same site a few times during the year and ran into Alf on nearly every occasion: - (Now we were convinced that Alf actually lived in the Reserve!). Alf soon warmed up to us and started showing us different orchids (and other plants) in the Reserve: Leek Orchid, Gnat Orchid, Tangle Orchid and Beard Orchid. Alf knew the orchids all by their common names, which very often makes more sense to the layman.

Then, to our utter dismay, when we returned to the site after a couple of months, we found that the area where the orchid colony was located was covered by road construction materials as a result of some recent road work and the small colony of Flying Duck Orchid was completely buried underneath. We started searching the surrounding areas in the hope of finding other colonies. We kept telling ourselves if the Flying Duck Orchid was as common as some of the reference books were telling us, there might be other colonies not too far away. However, after repeated searches, we failed to locate any. Next time when we met Alf, we mentioned to him the incident and asked him if there was another colony of Flying Duck Orchid around the place. He just smiled knowingly but kept silent. We didn't persist with our questioning, knowing that if there were others and if they were far from the roads, they were in good hands and should be safe.

We had better luck after getting detailed instruction from a friend, a keen photographer of terrestrial orchids who saw the orchid in bloom in Myall Lake National Park, north of Sydney only a week before. It was quite a large colony with up to a hundred inflorescences. We felt a bit disappointed at first as we approached and got close to have a clear sight of the plants, because of the small size of the flowers. However, this anticlimax was soon replaced by amazement, especially when we sat down and admired the amazing sight in front of us. How closely each individual flower resembled a duck in flight! What a sight it was seeing hundreds of these ducks flying up towards the sky right in front of us against the rising morning sun. We sat there for a long time pondering whether there was an evolutionary basis for the flowers of this orchid to take on the shape of a duck. The orchid reminded us of the spontaneous utterance nearly 200 years ago of John Lindley, the distinguished orchidologist: "What can they all be for?", when he first encountered the spirals (labella and columns of the flowers) dangling from *Cycnoches maculatum*. For years, scientists have been intrigued by the floral modifications and functions of orchid flowers. Based on the length (30 cm) of the nectar spur of *Angraecum sesquipedale*, a native orchid of Madagascar, Charles Darwin predicted the existence of its pollinator, *Xanthopan morganii praedicta*, with a proboscis capable of extension to a length of nearly 30 cm, 45 years before its actual discovery. We were aware of the pollination mechanism of the Flying Duck Orchid and knew that the labellum (duck's head) acted as a trap for any unsuspecting sawflies which were looking for mating partners. So we had to convince ourselves reluctantly that the "flying duck" resemblance might just be all in people's imagination. However, we still couldn't help marvelling at such coincidence in nature.

Later in the same year, we saw the orchid for the third time in a friend's backyard. Knowing that we were keen to see the orchid, Mike invited us to his place when the orchid was in bloom. Being a native orchid enthusiast, he has kept his acreage "backyard" largely as undisturbed bush land and he knows exactly where the different colonies of orchids are. He told us, from his experience, conditions of the Flying Duck Orchid could vary tremendously in different seasons and it was a particular bad one the year before. We had a very leisurely afternoon enjoying the sight of the flying duck orchids as well as other terrestrial orchids. We knew that it was towards the end of their growing season and very soon they would vanish from sight throughout the whole of summer before the re-emergence of their inconspicuous leaves next spring/summer, like they have been doing for thousands of years.

After "discovering" the Flying Duck Orchid for ourselves, we started to worry about its long-term well being and the long term well being of the other terrestrial orchids. In our long search for the Flying Duck Orchid, we had first-hand experience of the various threats affecting its survival and the survival of many other terrestrial orchids. Many of the reserves and nature parks we visited were heavily infested with weeds. On many occasions we found terrestrials like *Pterostylis*, *Calochilus*, *Acianthus* growing amongst and in competition with exotic weeds. We witnessed instances of vandalism: colonies of *Pterostylis nutans* being dug out by animals or "orchid lovers". In many instances, their intricate skills of camouflage became their downfall as we witnessed whole colony of Flying Duck Orchids being buried alive. The irony of this incident is that the culprit was actually unaware of what he/she had done!

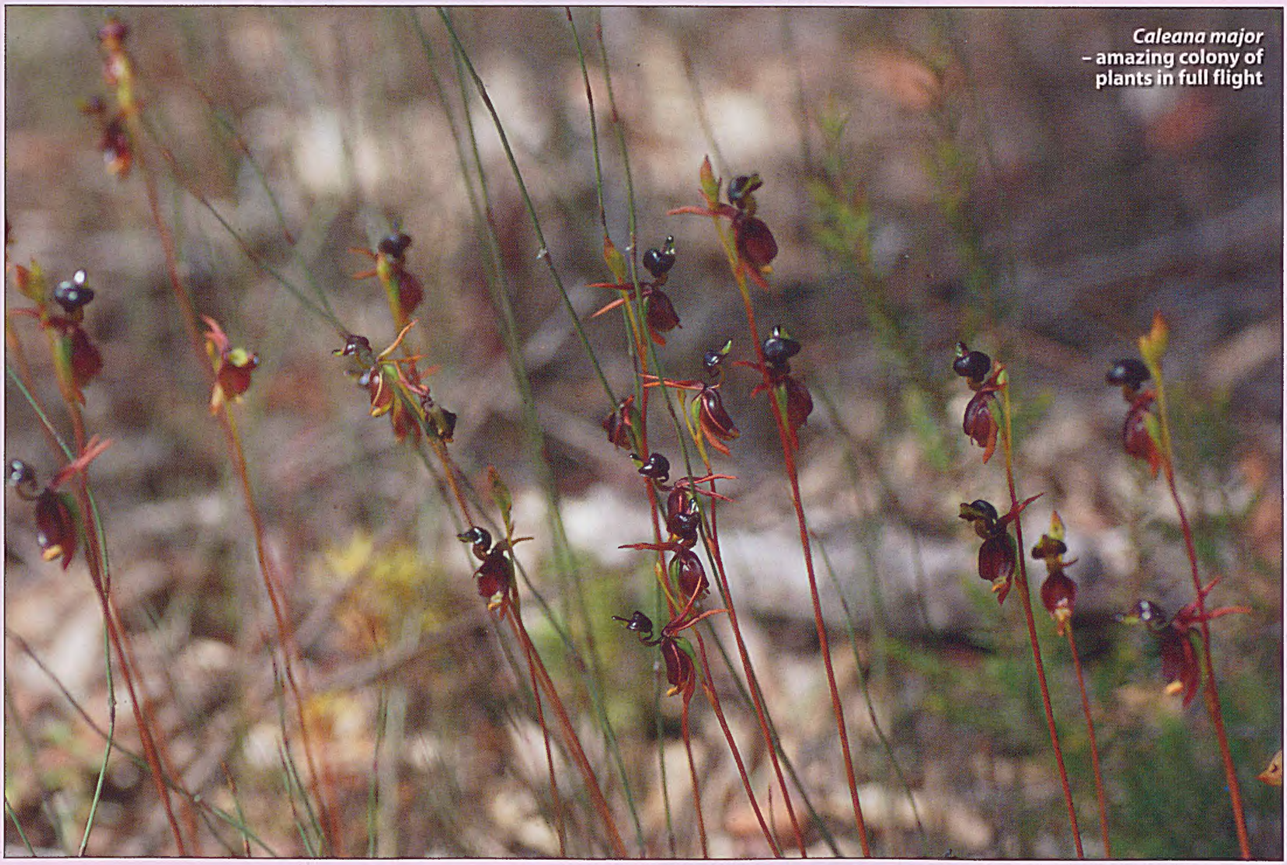
Outside the reserves and national parks, their situations are even direr. They have been and are still under constant threat of habitat destruction due to various human activities, namely land clearing, mining, agricultural and grazing activities. These have led to the decimation of many terrestrial orchids in Australia. What are left are still being adversely affected by modification of their habitats, like changes in the conditions of the soils due to activities such as compaction, soil acidification/alkalisation and changes in nutrient balance as

***Caleana major* showing the single leaves of two plants**

a result of fertiliser application. Unlike the epiphytes, terrestrial orchids live in the soil and are therefore highly influenced by soil conditions. These changes in soil conditions due to human activities can affect the orchid directly or equally importantly, indirectly via their effects on mycorrhizal fungi which are so much part of their survival. We are concerned that many current attempts of re-introduction of terrestrial orchids to their former locations might not be successful because of the permanent changes in the soil conditions like pH or compaction status. Some of us may be familiar with the fate of *Diuris fragrantissima*, the Sunshine Orchid, claimed to be Victoria's most beautiful orchid and was once a very common terrestrial orchid gracing the vast grassy plains to the west of Melbourne. However it suffered a catastrophic decline in abundance since European settlement and at one stage the natural population dropped to 30 plants, found only in one location. This is only one example that has been documented, but there might be many others that have also suffered the same fate and even worse, to the point of no return: extinction. In NSW, 66 terrestrial orchids are currently listed as "threatened".

It would be nice if we could cultivate the Flying Duck Orchid. We see part of the solution to conserve many of the terrestrial orchids and hence to secure their future is to be able to grow them successfully under cultivation. It is now recognised that conservation by cultivation has a number of benefits for conserving threatened plant species. Successful cultivation of these orchids will make education of and promotion to the public easier. The increased availability of the orchids via cultivation will reduce illegal collection and production of sufficient tubers/plant for future re-introduction projects. Unfortunately, cultivation of some terrestrial orchids, including the Flying Duck Orchid is handicapped by their strong dependence on mycorrhizal fungi. So far, to the best of our knowledge, attempts of cultivating the Flying Duck Orchid have been unsuccessful. Lack of persistence is the reported problem as the orchid might grow for a couple of seasons but became weaker with time and finally die off. We are aware of recent research in the development of better inoculation techniques so that orchids can be grown in culture with the necessary mycorrhizal fungi. Some early indication is that the successful cultivation of mycorrhizal fungi dependent orchid is not as simple as merely putting the orchid and the right fungi together. Suitable cultural methods for the orchid as well as the mycorrhizal fungi are both required to grow the orchid successfully. Therefore, more research is needed but this has been handicapped by insufficient funding support. As far as we know, the mycorrhizal fungi associated with Flying Duck Orchids have not even been identified. Therefore in the foreseeable future, the Flying Duck Orchids can only be admired in their natural habitats. We just quietly hope that meanwhile the "Alf" and "Mike" of this world will be able to preserve this very unique orchid for future generations.

The Flying Duck Orchid will always be our favourite orchid. In our two-year journey of searching for it, the orchid has brought us closer to nature. On a personal level, all those bush walks we undertook looking for orchids have brought back fond memories of the time when we were undergraduates and first met each other. As part of Plant Ecology course that we were both enrolled in, we spent a lot of time wandering into the countryside of Hong Kong trying to identify the



***Caleana major* – amazing colony of plants in full flight**

different plants. What started as the excuse to see more of each other developed into a lifelong common interest in plants and plant ecology. In the last two years, we have enjoyed all those orchid field trips when we saw a whole range of terrestrial and epiphytic orchids in their natural habitats. We have to count ourselves lucky as we still have so many native orchids growing in our bush land. To us, bush walking has taken on another dimension, depending on the time of the year; there are always different orchids in bloom just round the corner waiting to greet us like old friends. In the course of knowing more about this orchid, it has changed our perspective of orchid growing as a hobby. We now do not just merely admire the exquisite beauty of the orchids but also their intricate mechanisms of survival and delicate balance with nature. We are concerned about their survival and sustainability in their natural habitat and hoping for better ways of conservation coming soon.

Acknowledgement: In our quest for seeing the Flying Duck Orchid, we are grateful for the assistance given by Mike Harrison, the late Tony Rodgers and the dedicated ranger Alf. Last but not least, we thank Sau Shan (Sau-wan's sister) whose email started this memorable orchid journey for us.

Epilogue

We took many photographs of the Flying Duck Orchid and sent them to Sau Shan. She replied promptly, "They are really cute. Have you grown them in your garden yet?" We can only wish!!! ■

Yin & Sau-wan Chan
Email: kyswchan@bigpond.net.au

2014 AOF Essay Prize Winners

The winners of the 2014 AOF Essay Prize were announced at the Annual General Meeting of the Australian Orchid Foundation held on October the 26th 2014 in Melbourne.

First prize (with the above article on the Flying Duck Orchid) was won by Yin & Sau-wan Chan from Beecroft in New South Wales. Second prize was won by Jan Robinson from Engadine in New South Wales. Third prize was won by Myra Chalmers from Lilli Pilli New South Wales.

An AOF Special Award was also announced and the recipient of the book *'Growing Orchids in Cool Climate Australia'* is 13 year old Hayley O'Donnell a student at Willunga High School South Australia.

The topic for 2015 is *"How do you manage your orchid collection without relying on artificial heating and/or cooling?"*. Entries close on the 30th June 2015. See page 63 of this issue for details.

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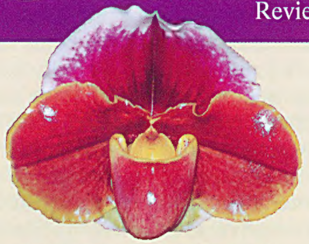

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Slipper Orchids at Sunset Valley Orchids

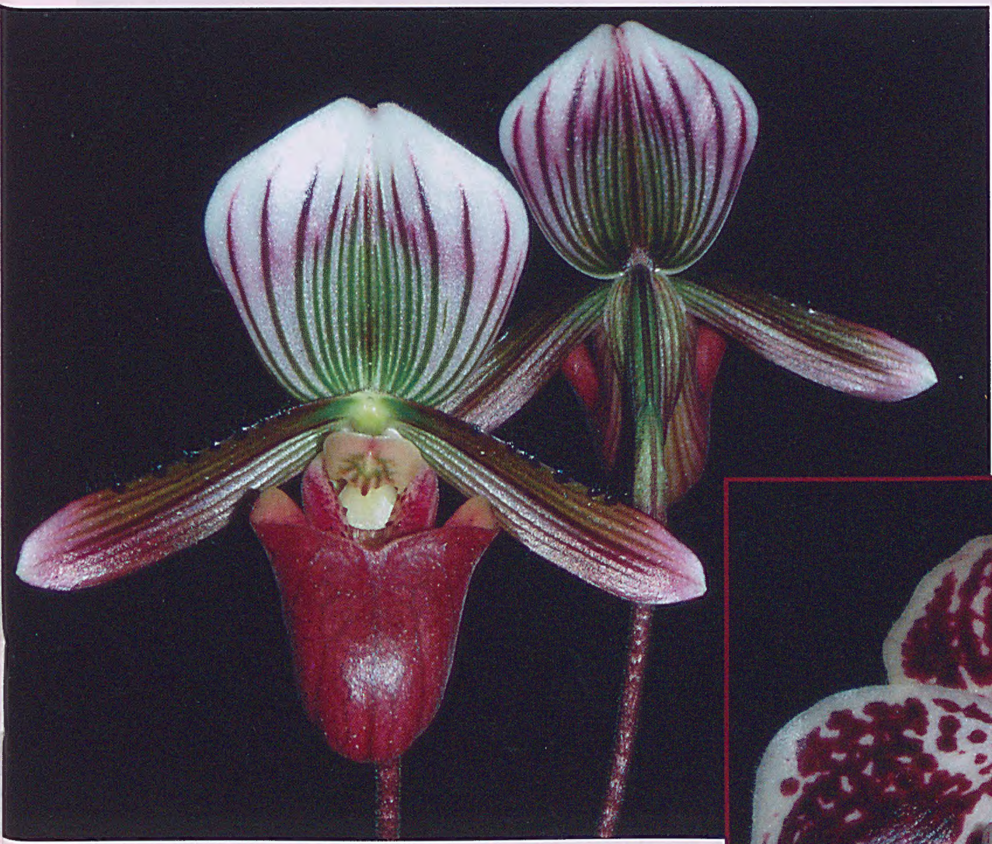
Text and photos by David Banks

Fred Clarke of Sunset Valley Orchids, California, USA is well known throughout the orchid world for his groundbreaking work with *Catasetum* alliance hybrids as well as his exceptional *Cattleya* breeding. What many don't realise is Fred's interest in a number of very different groups of orchids, including *Bulbophyllum*, Australian Dendrobiums, Paphiopeduilums and lately, *Sarcochilus*.

I was very fortunate to visit Fred and his vast nursery when I was in southern California in July 2012. I was massively impressed! Not just by the clean and organised layout of his setup, but here is a plantsman who really knows how to grow a full range of very different orchids to their full potential. One thing that allows this is that Fred keeps all of a particular type of orchid all together. Seedlings are grown in large blocks, with those in the same pot size kept together.

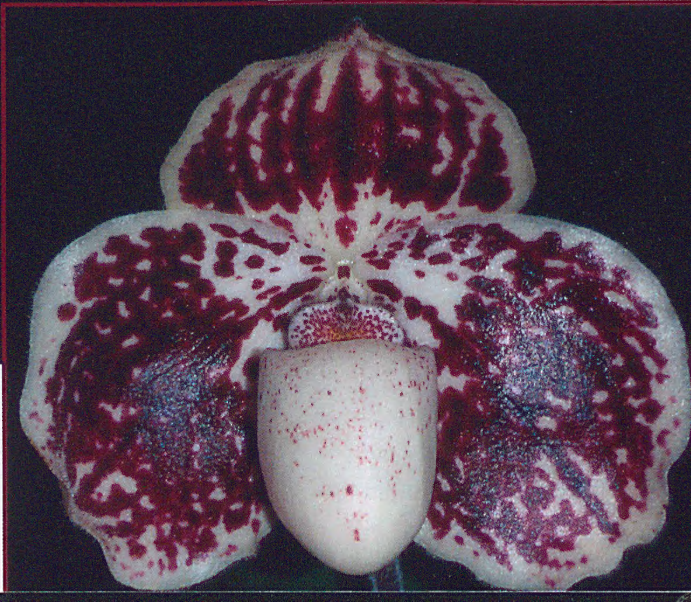
Some plants require constant moisture and humidity throughout the year, like *Paphiopedilum* slipper orchids, whilst others – like Catasetums and their relatives have distinct wet and dry growing periods. The orchid greenhouses have been modified with the particular orchid to be grown there in mind.

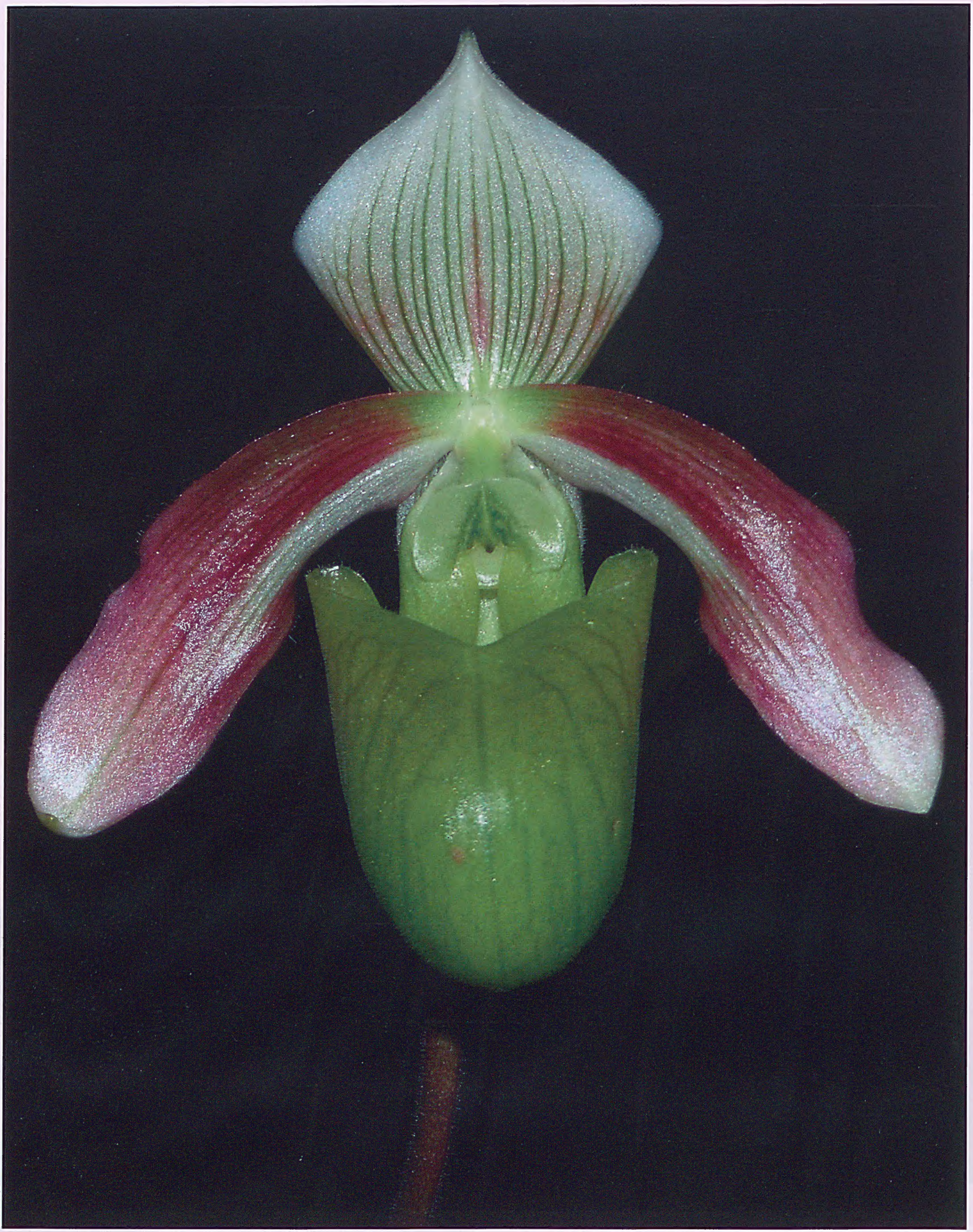
But what impressed the most, was not just the robustness of Fred's orchid plants, but the overall horticultural high quality of everything he grows. No wonder plants from Sunset Valley Orchids have been bestowed with literally hundreds of quality awards from the American Orchid Society for Fred and his growing band of customers. Fred has sourced only the very best available, and he is a ruthless culler of inferior plants, or poor growing seedlings. Many could learn from this!



Above: *Paphiopedilum barbatum*
– this delightful primarily Malaysian species is grown as a commercial pot plant. It is a scarce species in Australia, that is often confused with smaller forms of *Paphiopedilum callosum*.

Below: *Paphiopedilum godefroyae*
– there has been a lot of "linebreeding" done, especially in Taiwan and Japan, to accentuate the darkness of the blooms. They have now developed almost solid maroon-black blooms from this boldly spotted species. Personally I think many of these are hybrids between *Paphiopedilum godefroyae* and the very closely related *Paphiopedilum leucochilum* – that has a pure white labellum/pouch. Many regard these as variants of the one species in any case.





Above: *Paphiopedilum violascens* – This species from Kar Kar Island in Papua New Guinea is constantly under threat from orchid poachers and the constant threat of volcanic eruptions. It also has a reputation for being quite difficult to grow; often dying after blooming as for some reason they refuse to put out new growths. These seed-raised plants have been selected for vigour and I was impressed with how strong growing they were.

We had a wonderful chat about various aspects of orchid culture, judging, breeding and genetics that started in the afternoon and finished in the late evening! Fred is a goldmine of knowledge which he freely shares and is one of the main reasons he has become so popular on the speaking circuit in the USA and Australia. From the hobby perspective, he is to be applauded for making his superior and unique hybrids available to the wider orchid community. In Australia, Rosella Orchids NSW sell many of Fred's *Cattleya* species and hybrids as advanced seedlings.

Interestingly, almost all of his orchids are grown exclusively in Kiwi Orchid Bark, which Fred swears by. This is *Pinus radiata* pine bark that is imported from New Zealand, that is now also available in Australia. His orchids certainly perform well in it.

Fred grows a range of different styles of slipper orchids. It is based on species, primary hybrids (especially those derived from the Section *Parvisepalum* "Chinese species"), multiflorals and novelties. Some of the fast growing and maturing "Maudiae" types are grown as commercial flowering pot plants, but most are bred for Fred's interest, and the hobbyist orchid market.

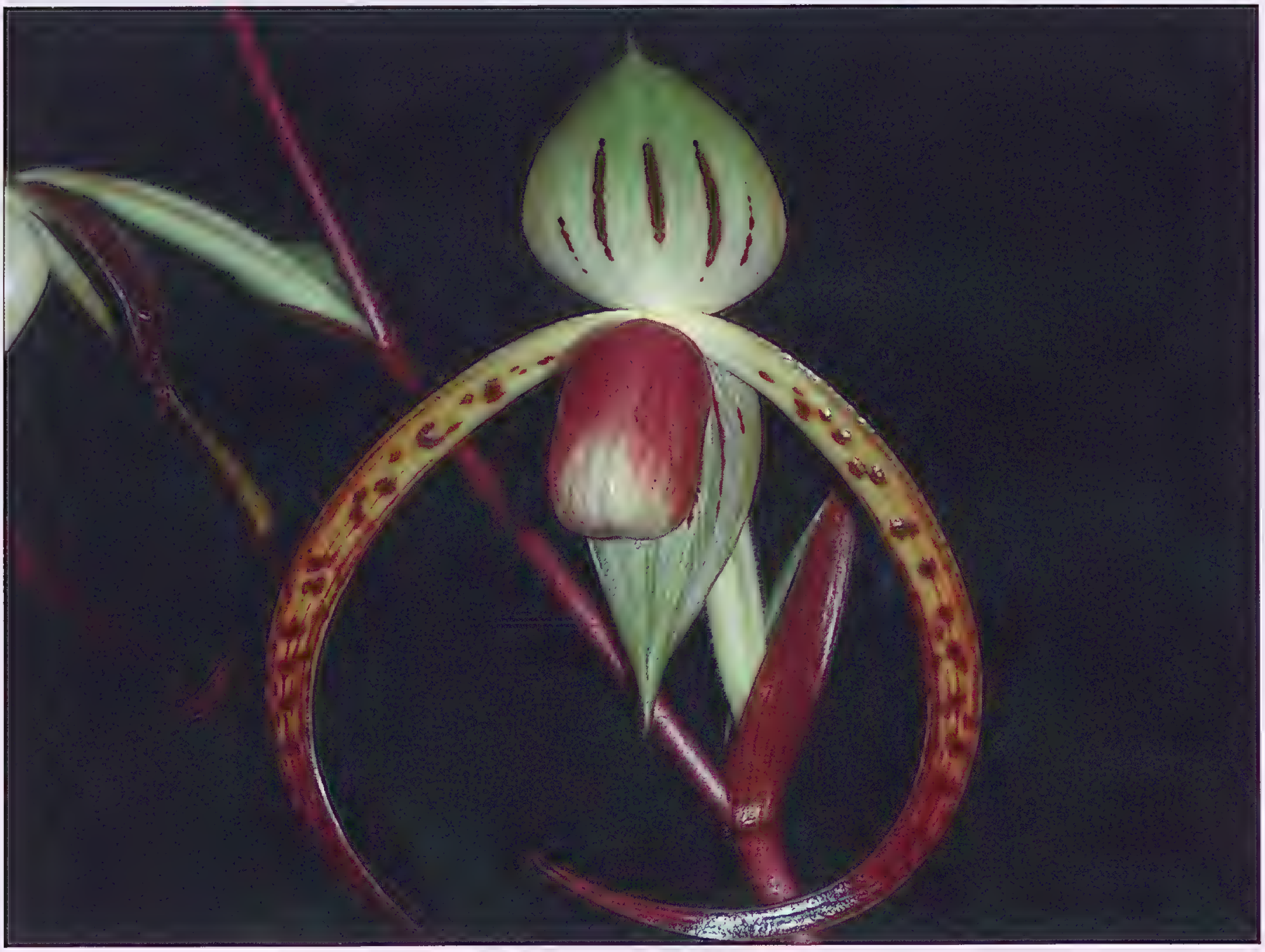
I have included some images and commentary on some of the slipper orchids that caught my eye in the private collection at Sunset Valley Orchids, and thank Fred for his time, information exchange and hospitality. ■

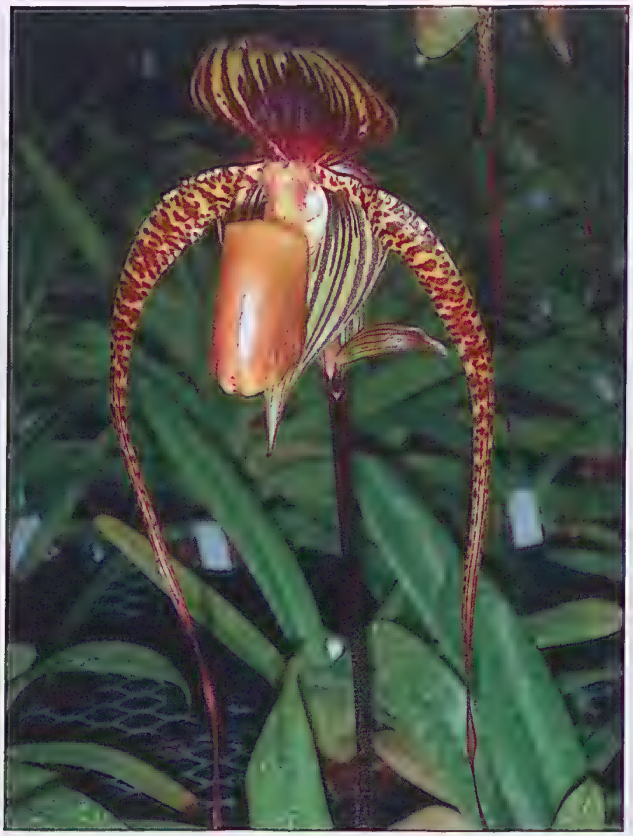
David Banks
Seven Hills, NSW
Email: david@hillsdistrictorchids.com

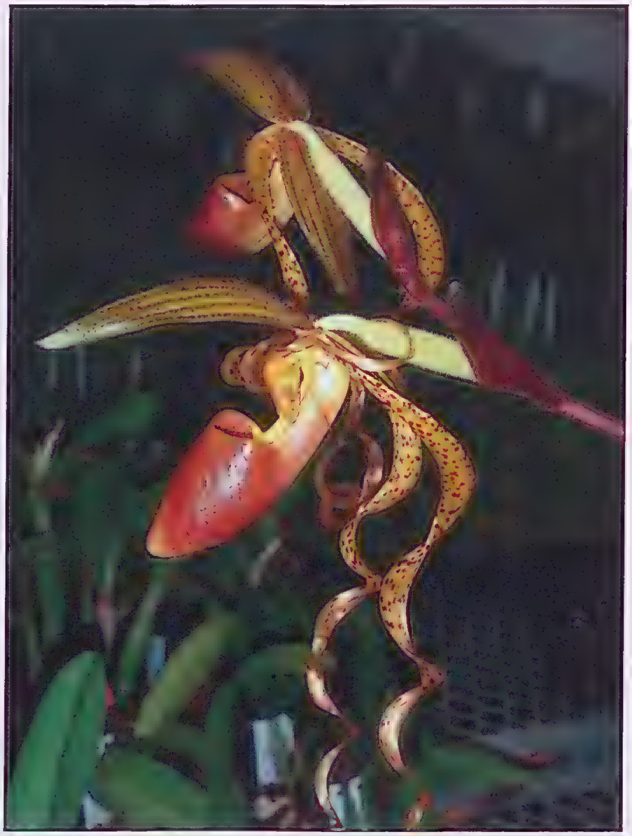
SVO
Sunset Valley Orchids
Superior Hybrids for Orchid Enthus

Above: Fred Clarke and **David Banks** at Sunset Valley Orchids

Below: *Paphiopedilum* Memoria Joe Levy – this is a most impressive multifloral primary hybrid between *Paphiopedilum stonei* and the recently described *Paphiopedilum gigantifolium*. An elegant flower, I love the character of the glossy moustache-like petals.





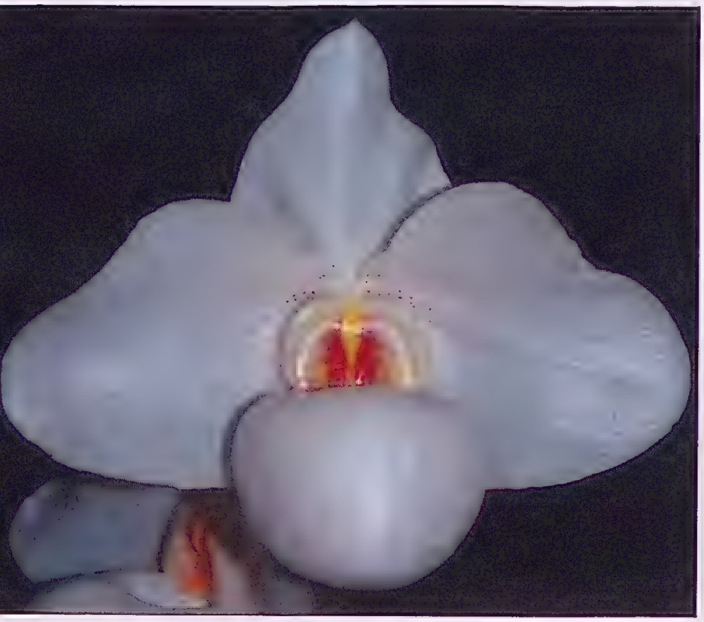


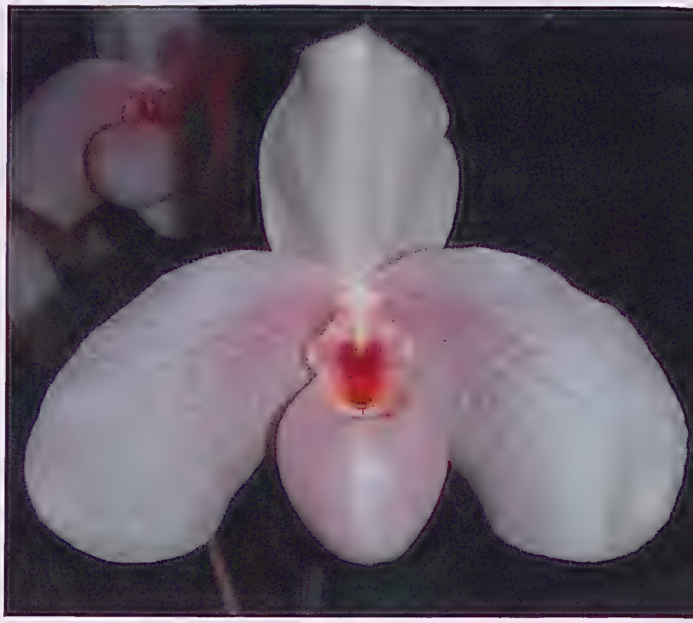
Above left: ***Paphiopedilum*** **(Shin Yi's Pride x *adductum*)** – Fred had a few of these in bloom, this one had the strongest colour, should be special if it gets a few more flowers on a more mature plant. *Paphiopedilum* Shin-Yi's Pride is (Michael Koopowitz [*philippinense* x *sanderianum*] x *rothschildianum*).

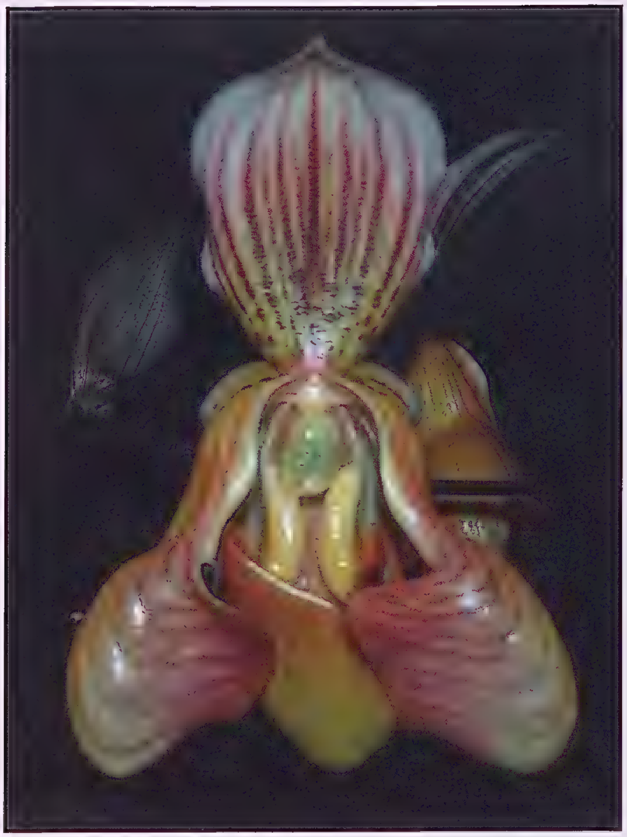
Above right: ***Paphiopedilum*** **Chiu Hua Dancer** – well this was always going to be an obvious hybrid to create (*sanderianum* x *gigantifolium*). These should grow into massive plants under ideal culture, with huge spidery flowers. It must be said that these hybrids are much faster and easier to grow than their spectacular species parents.

Below left: ***Paphiopedilum*** **Armeni White** (*armeniacum* x *delenatii*) – this should be a great stepping stone for further breeding onto unrelated white complex lines.

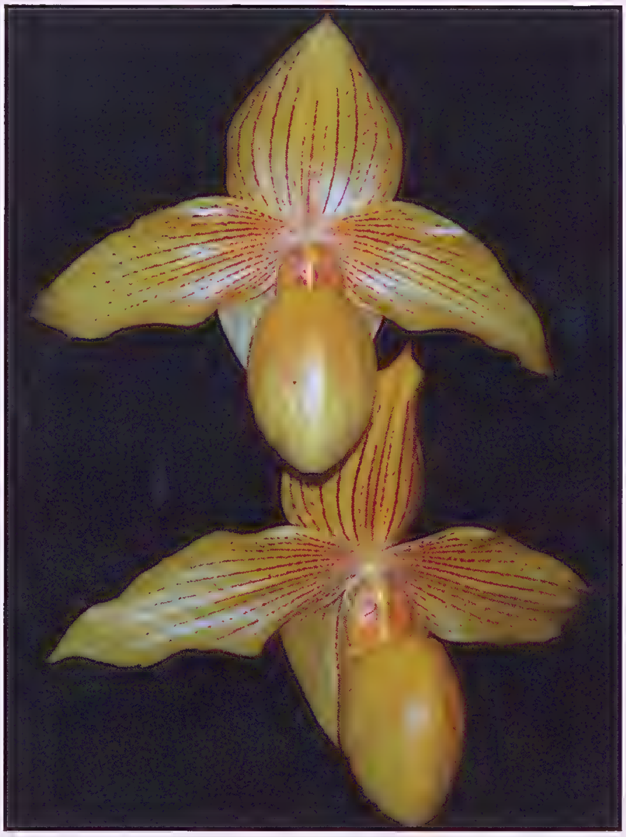
Below right: ***Paphiopedilum*** **In-Charm Handel 'SVO'** – some would be indifferent about the dog-eared petals, to each their own! This is *delenatii* x *hangianum*.



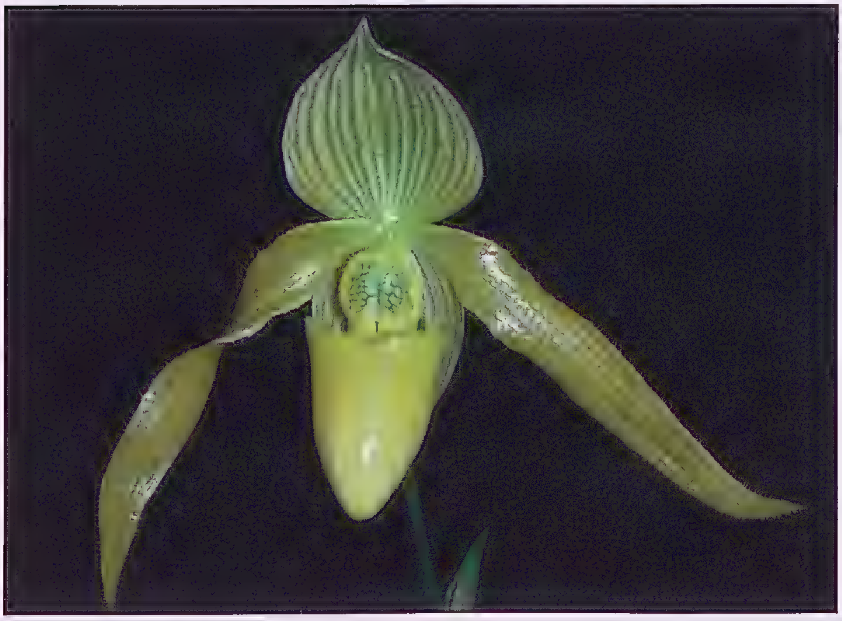




Above left: *Paphiopedilum* Lebaudyanum 'Tres Huevos' JC/AOS – here we have something that only its mother could (barely) love! This is a bizarre mutation of the popular primary hybrid between the Philippine species *haynaldianum* and *philippinense*. The cultivar name is Spanish that translates to either eggs or testicles. Pelorics are rare in slipper orchids, and this cultivar blooms like this every flowering season. Here the plant appears to have three pouches or slippers, as the petals have taken on the form of the labellum. But Hey, this plant was awarded!!



Above right: *Paphiopedilum* Dollgoldi 'SVO' – many times you see two really nice species mated together and the results are a disaster! This is a wonderful combination between the golden *Paphiopedilum armeniacum* from China and the elegant and regal *Paphiopedilum rothschildianum* that is endemic to Borneo's Mt. Kinabalu.



Left: *Paphiopedilum* Recovery – this is the albinistic (anthocyanin-free) form of the hybrid between *sukhakulii* and *philippinense*. These are novelties because they are that little bit different.

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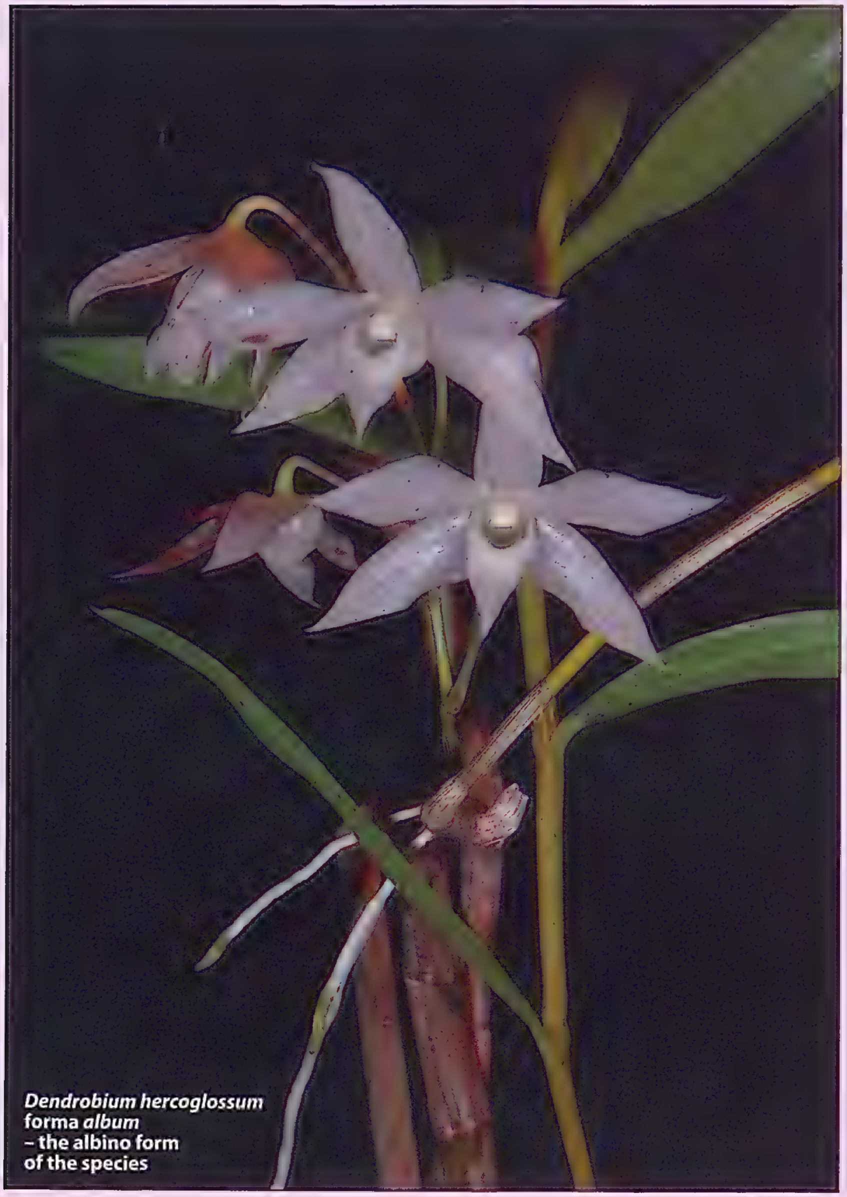
AOR 025

Dendrobium hercoglossum forma *album*

Text and photos by David Banks

I have always had an interest in rare or unusual colour forms of what are generally considered "common" orchid species. White-flowered forms or "albinos" were plants that I have always looked at as being special. A couple of issues ago in the *AOR* we featured quite a number of articles on various albinos and explained the science and terminology behind it all.



Dendrobium hercoglossum forma *album* – the albino form of the species

Dendrobium hercoglossum is an extremely widespread species being found throughout most of South-east Asia (Southern China to Peninsula Malaya), the Philippines and parts of Indonesia. From what I have been able to establish, most plants in cultivation in Australia have originated from Thailand. They are easily grown plants for the shadehouse in frost-free positions. Ours take a wide temperature range in Western Sydney, and I know of plants growing and blooming well from Southern Victoria and Tasmania, right up to the coastal tropics of Cairns in North Queensland.

Most of my plants are grown in fairly confined pots of a bark-based medium (with a small percentage of perlite and coconut chips), yet we have also had good results with specimens grown on treefern slabs and totems, but these required more frequent waterings.

Dendrobium hercoglossum is quite variable in growth habit, most forms have pseudobulbs that become quite lax as they age and elongate and can become somewhat untidy. In California, I have seen nice compact growing forms that have originated from China that have sturdy squat canes that remain upright, this type also prefer higher light. Aerials will often form occasionally from the older, leafless pseudobulbs, or prolifically on specimens that have lost or have a poor root system.

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AOR 041

Dendrobium hercoglossum is from Section *Breviflores* that includes the closely related *Dendrobium aduncum* and *Dendrobium linguella* (which I find quite difficult to separate!).

The flowers are produced on short inflorescences of up to six pink to lavender coloured blooms, generally off the leafless canes. In damp and humid conditions, the thin-textured flowers are prone to botrytis fungal spotting. Keeping the blooms dry in a well ventilated area should reduce this. *Dendrobium hercoglossum* is a semi-deciduous species with its leaves only lasting for one or two years.

Last year I was alerted to both an albino and a bicoloured form of this species. The albino obviously had white flowers with the bicoloured form having white petals and sepals with a dark pink labellum. Thankfully I was able to secure a small division from Bill & Jan Miles trading as Orchid Species Plus in Victoria. It has done well for me over the past 12 months or so, producing new growth from the base as well as an aerial. I still need that bicoloured form!

This white-flowered form was described in 1984 as *Dendrobium hercoglossum* var. *album* from a plant collected in China. However it is not a botanical variety in the true sense, as it is just a chance unusual colour form that appeared within a population of normal coloured examples.

Dendrobium hercoglossum forma *album* would be its preferred botanical name. ■

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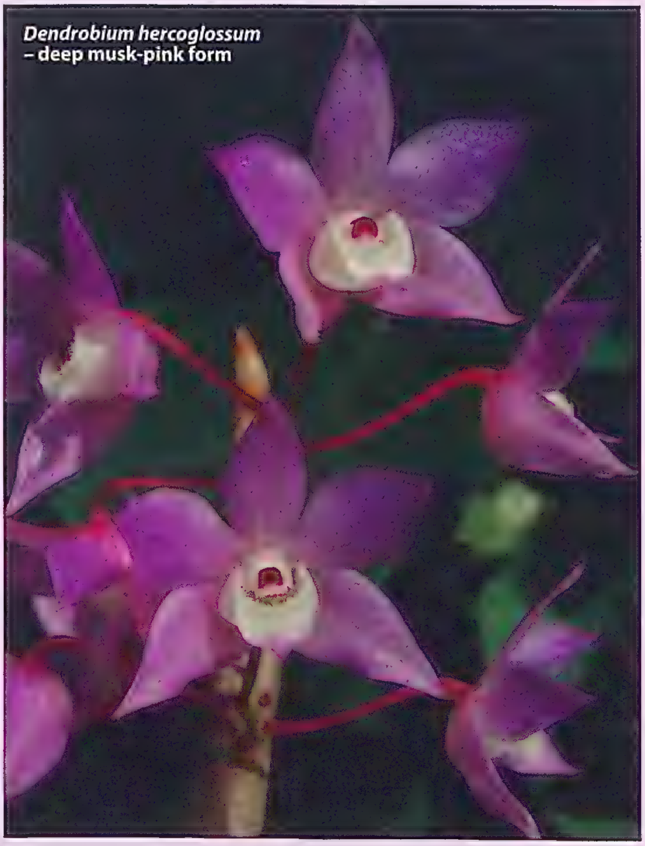
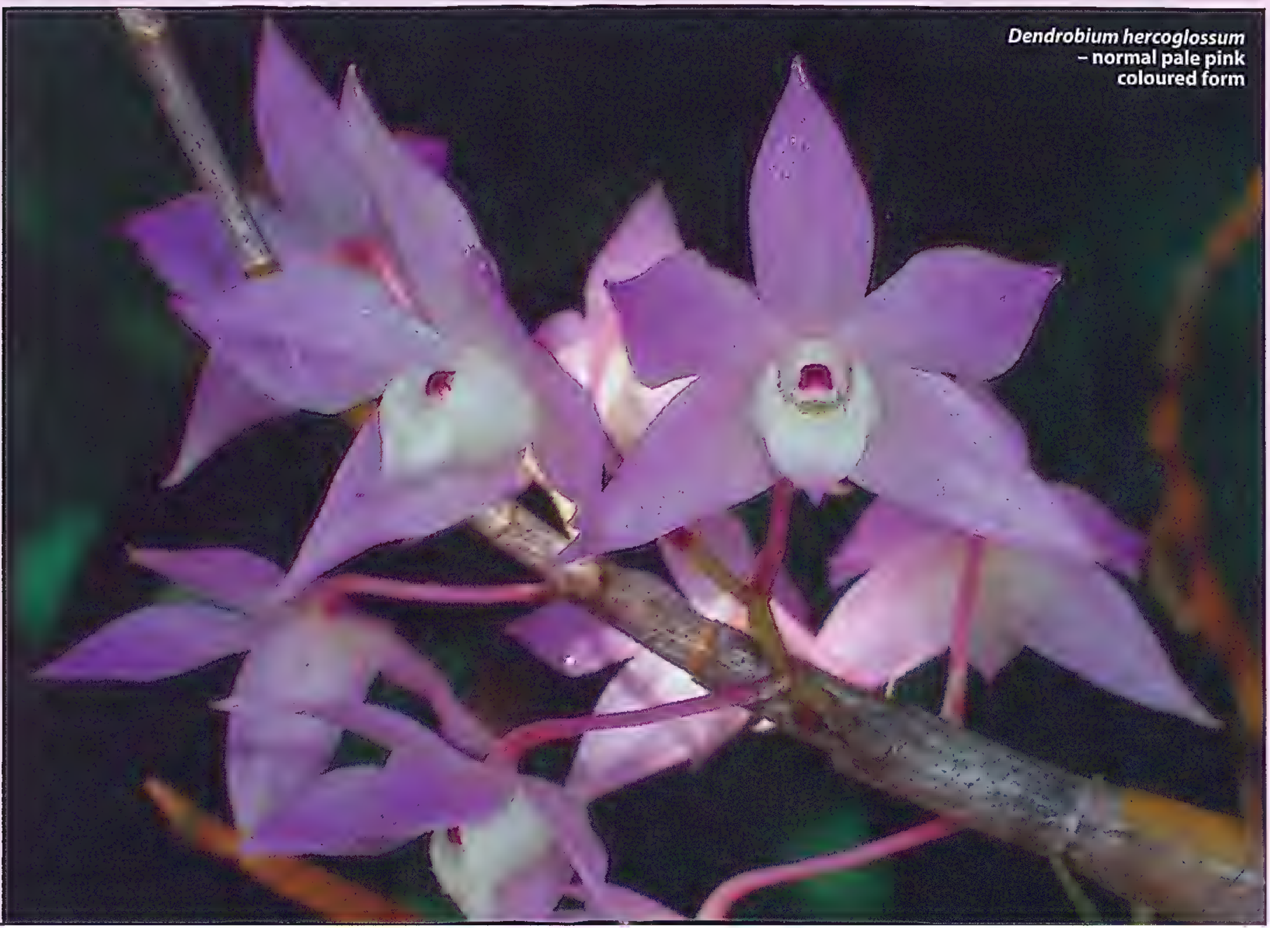


Dendrobium hercoglossum
– deep musk-pink form



Dendrobium hercoglossum
– normal pale pink
coloured form

Cattleya maxima forma *alba* - (Oops, Egg Over the Old Face!)

Text and photos by Andy Easton

Some years ago, I was generously given a division of *Cattleya maxima* forma *alba* 'Kathleen' by Dr. Bill Rogerson. He was speaking in South Florida and brought a piece to me. Not a small gift, as the plant sells in the hundreds of dollars and is highly prized. It's a pure white flower with a bright greenish-yellow stripe in the throat of the labellum.

While I have no problem with selfing something uniquely rare, I prefer to make a out-crossing of (genetically unrelated) species whenever possible. I managed to source another *Cattleya maxima* from Equagenera with the clonal name of *Cattleya maxima* forma *alba* 'Francisco'. Both plants were vigorous and I made the out-crossing, let the seed ripen as a virus check and sent off dried seed to various friends around the world. My suggestion was also that anyone growing the seed should treat it with Oryzalin to create an *alba* tetraploid strain of *Cattleya maxima*.

Richard King in South Africa was one of the seed recipients and he is quite experienced in the use of Oryzalin for ploidy doubling also. James Rose of Cal-Orchid was visiting in South Africa and kindly brought some flasks back for me. I immediately shared those flasks with him and other orchid friends, deflasking only four flasks for myself. I am not really in Cattleyas anymore so this was to be a hobby project.

Whilst deflasking the young plantlets, I felt there was some signs of anthocyanin pigment and this greatly troubled me. But others obviously were less concerned and thought the plants were quite green and indeed albas. I should mention we are able to grow our *Cattleya* Alliance fairly bright in Salinas and pigment is easily discernible. The young plants grew very fast in the plug tray and were so strong we dared to put them into 125mm (5") pots early in 2014. I was interested in tetraploids and only potted up maybe 50 of the thicker rooted plants for myself with maybe ten of the thinner-rooted ones for comparison purposes. I gave the balance to my greenhouse landlord.

In 125mm pots, the seedlings grew amazingly fast, a characteristic we see in all Oryzalin-treated deflasks. But that damn pigment seemed to be in nearly every plant. I speculated that there might be two separate *alba* groups in *Cattleya maxima*, just like is seen with *Cattleya trianae*. Maybe one of the *maxima*'s was a lowland form and the other an upland form? Not possible, both had heads of 10 or more flowers on every blooming. And there I was, speculating that *Cattleya maxima* might have plants belonging to both of Hurst's *alba* groupings! And I am still not sure which of Hurst's *alba* groups *Cattleya maxima* fits into!

About two months ago, I noticed that some of the seedlings were showing buds, all naked on the pseudobulb, minus a sheath. Three have flowered, all rather similar, pale lilac with darkly veined lips, characteristic of *Cattleya maxima*. I have always seen this colouring when I cross a semi-alba *Cattleya* with an *alba* previously. The flowers are attractive and now I am trying to ascertain which might be tetraploids and which are still diploids. Not easy to decide on a very precocious first blooming!

Anyway a few weeks ago, the *Cattleya maxima* forma *alba* 'Kathleen' was in bud and the *Cattleya maxima* forma *alba* 'Francisco' was open and I walked by and something did not look kosher. I looked much more closely and there on the 'Francisco' were the faintest pinkish network of lines on the labellum. I felt stupid and a bit mad at the same time!

So *Cattleya maxima* forma *alba* 'Francisco' is still a lovely pale-coloured example of the species but is definitely not an albino, as it clearly has anthocyanins, so should technically just be referred to and labelled as *Cattleya maxima* 'Francisco'.

But the enduring lesson from this exercise is that hybridizers should look VERY closely at putative albas if indeed they hope to breed further in truly genetic *alba* lines. I apologize for my inattention in this instance and while I will self pollinate the first obvious tetraploid in the group and anticipate 25% *alba* white progeny, I would have been much happier if I could have achieved all this a generation sooner!

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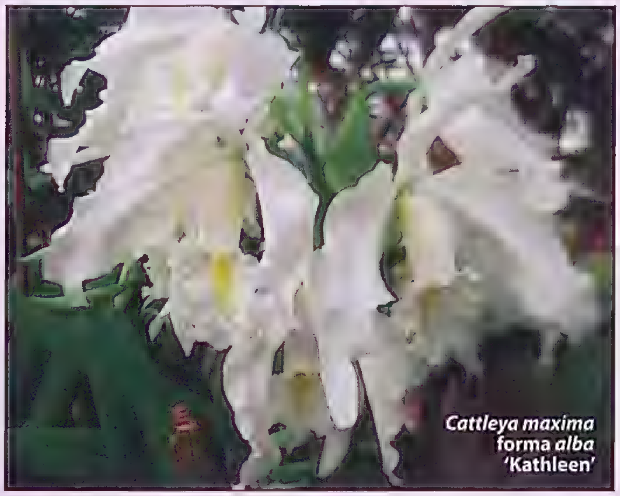
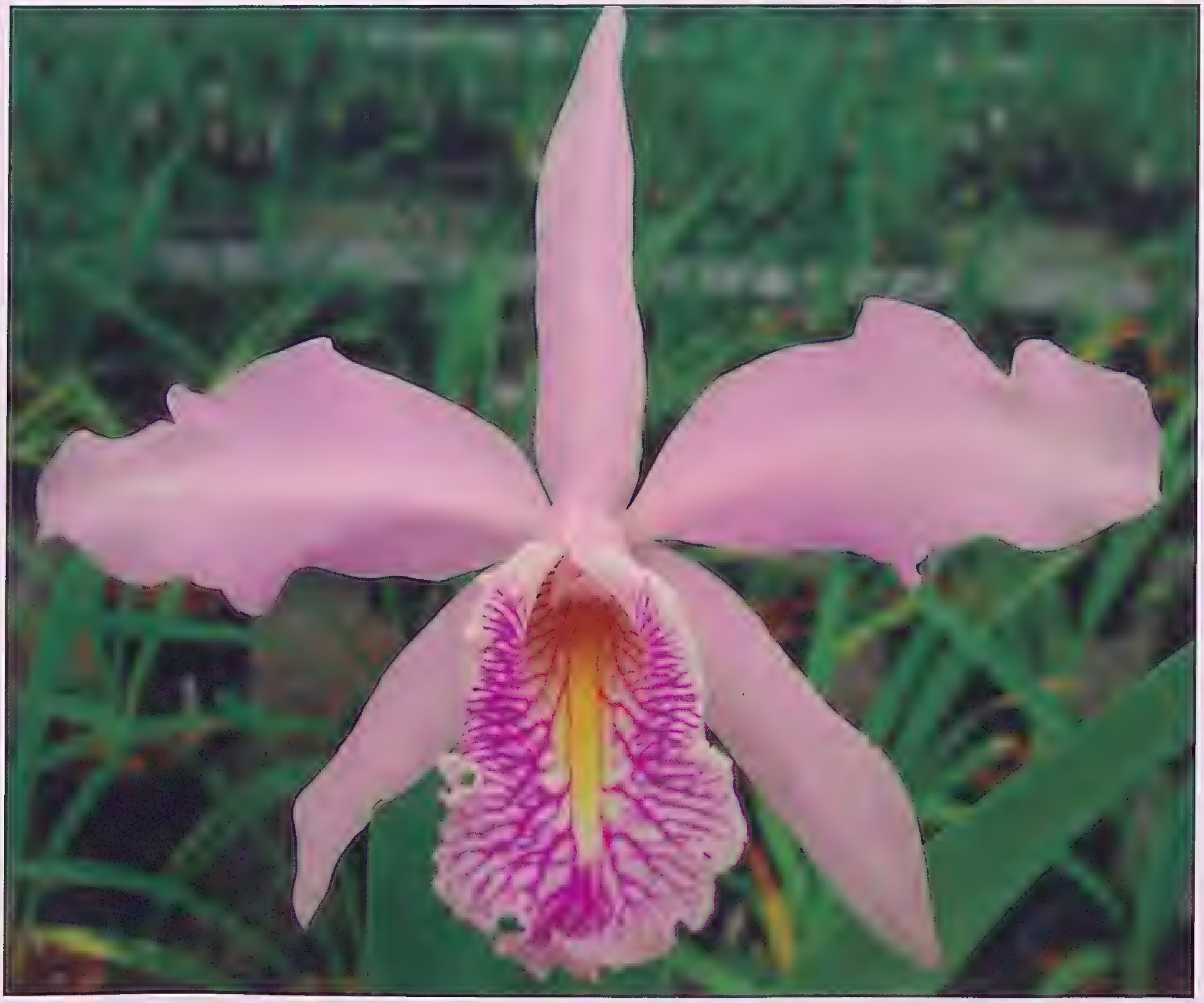
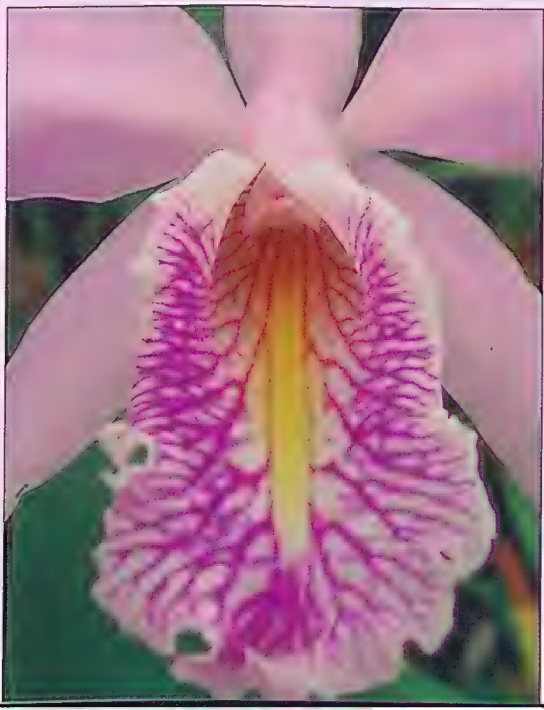


Cattleya maxima forma alba 'Kathleen'

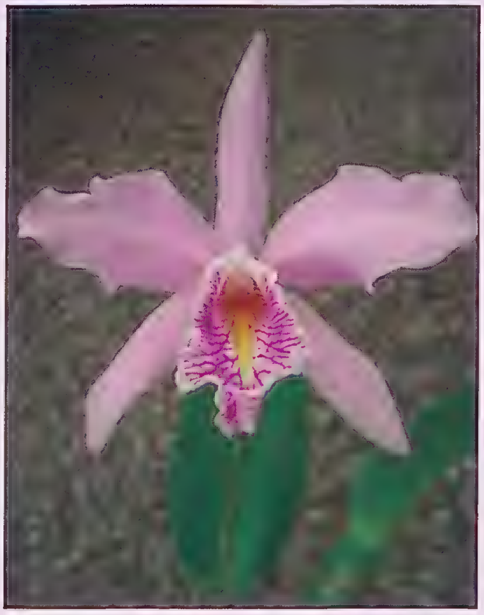
Cattleya maxima forma *alba* 'Francisco' – labellum detail



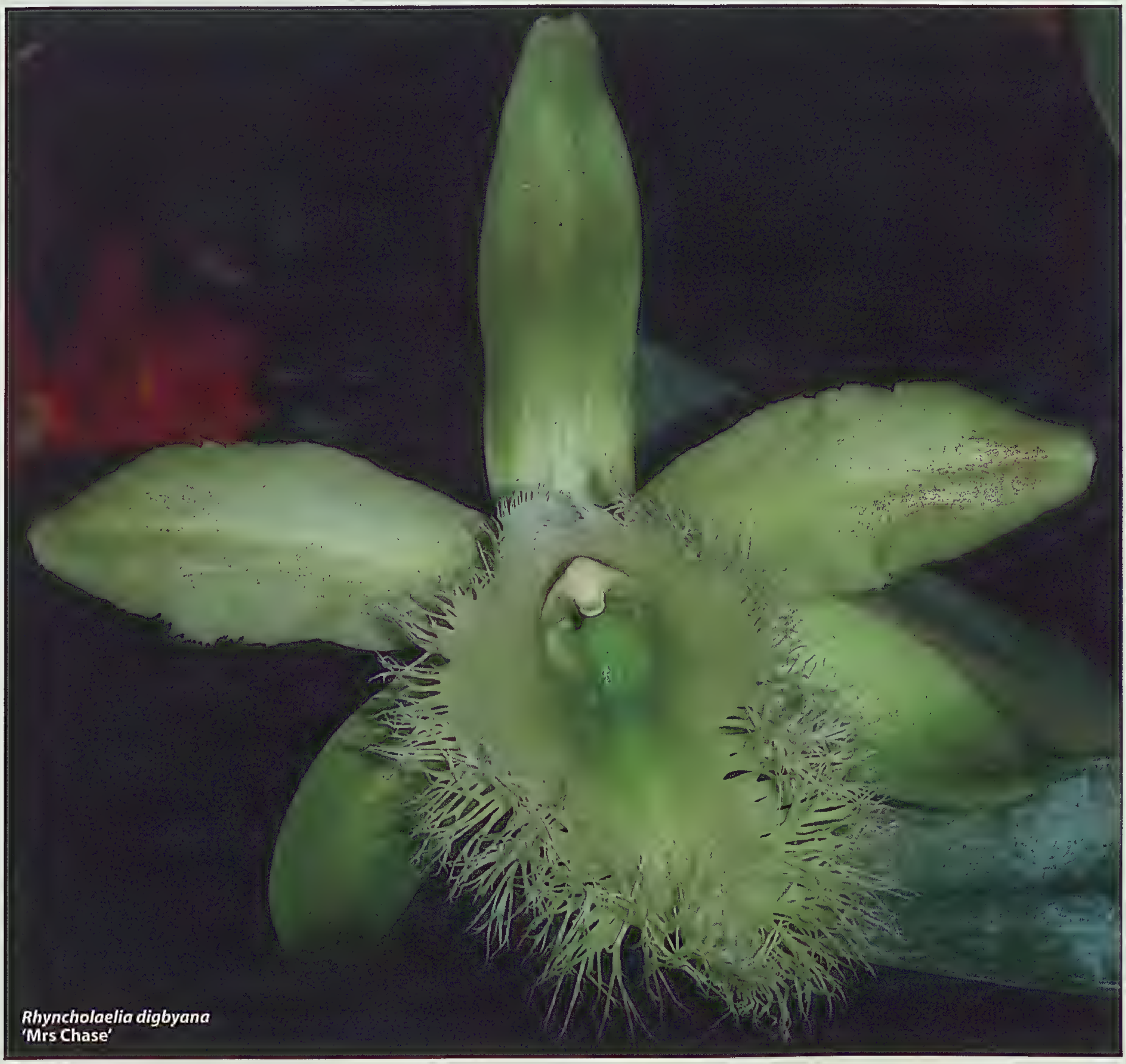
Above:
Cattleya maxima
(forma *alba*
'Kathleen' x
'Francisco') #1



Left:
Cattleya maxima
(forma *alba*
'Kathleen' x
'Francisco') #1
– labellum detail



Right:
Cattleya maxima
(forma *alba*
'Kathleen' x
'Francisco') #3
– labellum detail



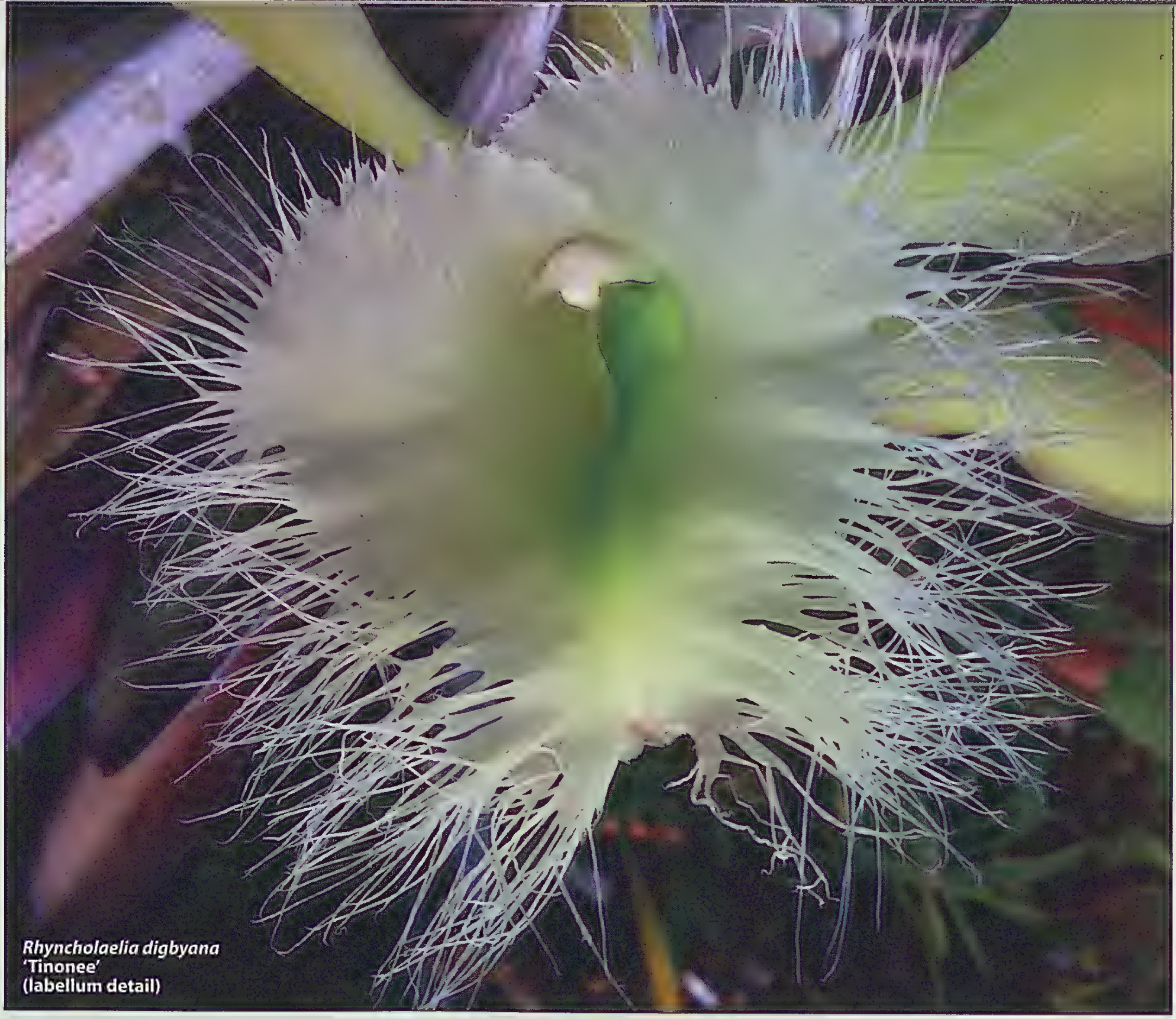
Rhyncholaelia digbyana
'Mrs Chase'

Rhyncholaelia digbyana - My Favourite Orchid

by Myra Chalmers

My favourite orchid is *Rhyncholaelia digbyana* (syn. *Brassovola digbyana*). The reason I really love this orchid is partly because it is very beautiful and fragrant, and partly because of all the memories it holds for me.

I had been in Australia for a few years and had settled in Gladesville. It took quite a while to get accustomed to this fascinating new country. Together with my husband Ron and three children, we had emigrated from the United Kingdom and had left nearly everything dear to us behind. This was a huge undertaking and I found that most of the things I enjoyed doing were not available here. I was happy and enjoyed living in the Sydney area. I had very nice neighbours but, sadly one of them who was a pensioner died. His distraught wife asked if Ron knew anything about orchids.



Rhyncholaelia digbyana
'Tinonee'
(labellum detail)

I told her that I didn't think so but I would ask him. We had a large property in the UK and were self-sufficient. We grew our own fruit and vegies - even grafted different types of apples on to the apple trees. We had large flower gardens, plus some hens for eggs and bees for honey.

Ron duly called in next door. There were quite a few pots of orchids and they were extremely pot bound due to the illness of their late owner. I learnt later they were species Cymbidiums and *Paphiopedilum insigne*. After they were broken up and repotted, my neighbour was delighted, but now she had far too many plants and so, to thank Ron for all his work, she gave him half of the newly potted orchids. I suppose we were now orchid growers.

Ron, being a university person, had many books and among them were books on botany, including some on orchids. These he perused to learn all he could about these exotic plants we now owned. A few weeks later he attended a conference in Brisbane. I stayed at home with the children. When he returned home he could not stop talking about the fantastic orchid show he had been to see. He had not believed his eyes as the flowers were so beautiful. He was hooked. He wanted to see more. Ron also told me that there was an orchid show being held at Five Dock that weekend and he wanted to take me along to see it. It was there (I think) that we learnt there had been a World Orchid Conference in Sydney in 1969. We had not heard about it until it was too late to go and see it. There had been an open day and conference at the University and we could not have gone anyway. We had missed going to the WOC by that much.

I walked into the Five Dock show and immediately fell in love with the most beautiful orchid flower that I had ever seen, not that I had seen many. This one was different. First of all it was, by my standards, a large flower with five long thin shiny petals (I had a lot to learn. It actually had two petals, three sepals and a lip. I found that out later). They were a delicate green in colour merging into creamy white in the centre of the flower. I had never come across a green flower that was remotely like the one I saw. It had the most unusual petal in the front and it had a long sort of shaggy fringe all around it. It was also of the palest green and creamy white (I learned later it was called the lip or labellum). The other visitors to the show were waxing poetically about other plants, but not me. That plant drew me like a magnet. I called Ron over and told him that if there was one for sale I would very much like to buy it. He told me the plant I was looking at was actually on the sales table and that there was no reason why I could not buy it right away. Silly me. I had been so engrossed by its beauty, to say nothing of the delicate perfume, and I had not noticed that it was not one of the exhibits. I was not leaving that exhibition without it. I could not wait to pay for it and really claim it as mine.

I carried it home. I nursed it all the way in the car. Once home this wonderful plant sat on my dining room table where I could sit and admire it and woe betide them if any of the children touched it. There was no way I was going to put it outside. Eventually the flower died and sadly the plant joined the others in the garden where Ron had built a small greenhouse. My orchid had pride of place there. The orchid "disease" had well and truly hit us and we started to collect other plants. Not really knowing what we were doing, we learnt very quickly not to buy mature plants that were not in flower. Obviously some people sold their plants at auctions that were not up to their own high standard. That became evident when some of these "dogs" eventually flowered.

We moved house a few years later with the help of a fellow orchid grower to whom we would be forever grateful. We now had a very large collection of many different genera. The *Brassavola digbyana* (as it was known then) I had bought was still my favourite and it thrived in its new environment. By now we had a hot house, a cool house and two bush houses - we lived and breathed orchids.

The years went by very quickly and in 1975 we spent a year overseas in Britain and Europe on sabbatical leave. The weather in Australia was not kind that year and the orchids were neglected. The neighbour who was looking after the plants did not water them when it rained and it rained a lot. Sadly many of the plants in the hot and cool houses did not survive. My precious orchid suffered the same fate as many of the other orchids. It looked quite sick and in spite of a lot of tender loving care, it too died. I was devastated. It was enough to make me give up as my pride and joy was gone forever. However, I didn't give up, but it took years to find another *Brassavola digbyana*. It was an old-fashioned orchid and the trend at that time was to buy bigger and better hybrid plants in the *Cattleya* alliance, with rounder and more filled in flowers. Also at this time, species plants were considered to be not worth growing as they did not have flowers of commercial value. We later installed an automatic watering system, which we should have done years before to make sure something like this could not happen again.

All of our orchids were beautiful in their own way. We grew everything: *Phalaenopsis*, Paphiopedilums, Vandas, many species orchids. You name it, we grew it. However, nothing thrilled me as much as my precious *digbyana*. I searched everywhere for another one. Eventually I managed to buy not one, but two small skinny plants of this beautiful orchid at a society auction. I was so happy now that I possessed two of them. I could not wait for them to flower. I fed them, watered them, however try as I could, I was not able to flower them. What is even sadder is that I did not have a photograph of the first orchid I ever bought.

Rhyncholaelia digbyana (syn. *Brassovola digbyana*) likes to have plenty of light and so I hung them high up in the house. They just dangled there and did nothing. No matter what I did they were not happy. They just did not thrive. The plants around them bloomed well. Why didn't they? I think they were off cuts from a plant that had never ever bloomed. Eventually they were consigned to the bin. I am still looking for another one.

I suppose I will have to go to Central America, probably Belize, or the Yucatan Peninsula in Mexico or one of those exotic places where this beautiful orchid originated, but I fear that quarantine would make it difficult or too expensive for me to bring one back to Australia. So if you see me at an orchid show in the Sydney area hovering around an orchid display that has a *Rhyncholaelia digbyana* in it, *please* check if it is still there after I leave. You know where I live! ■

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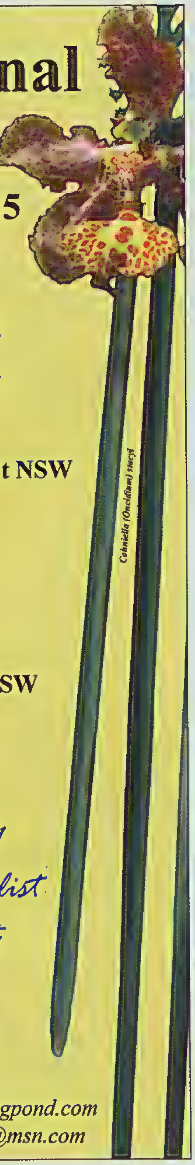

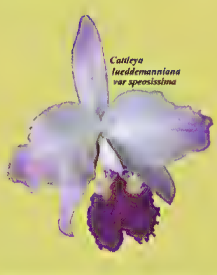

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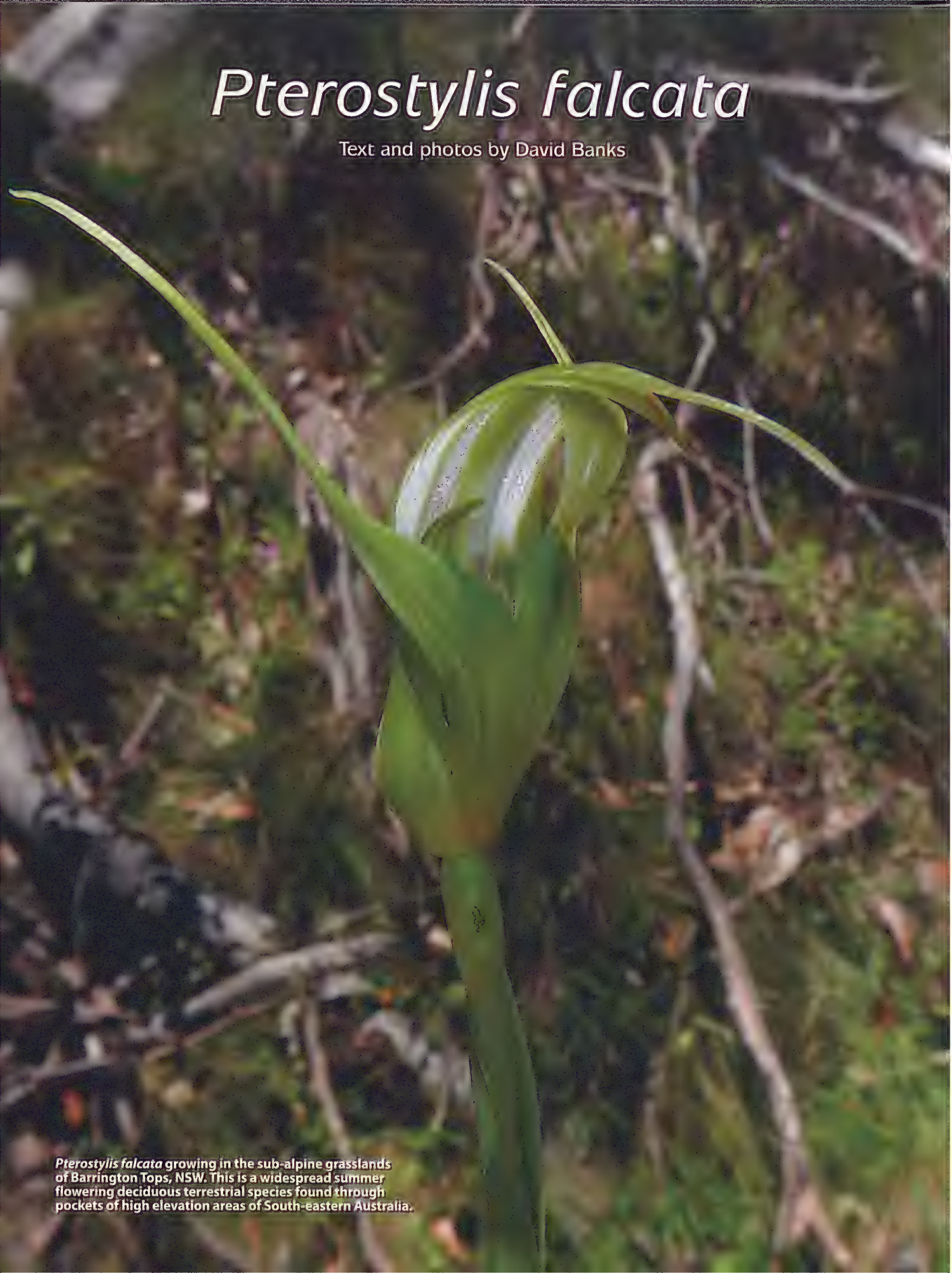
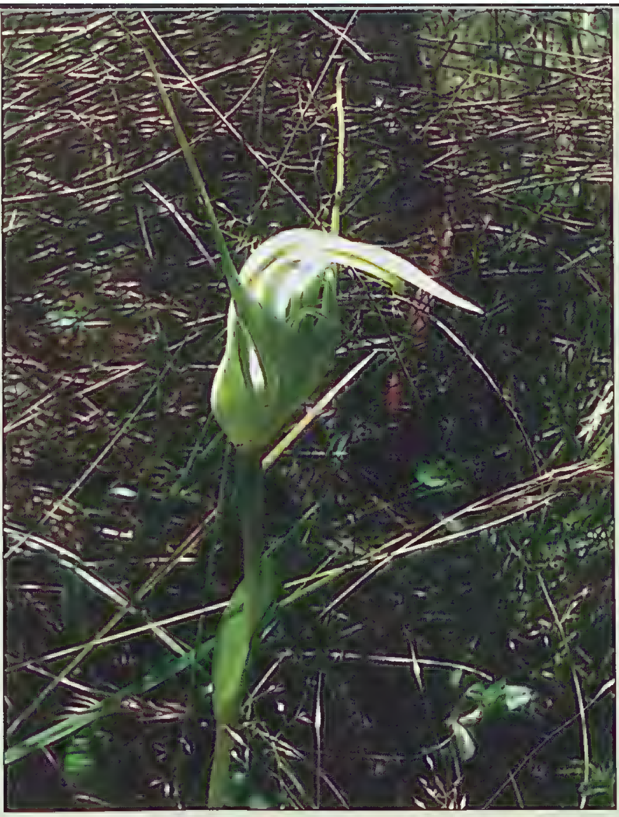
Pterostylis falcata

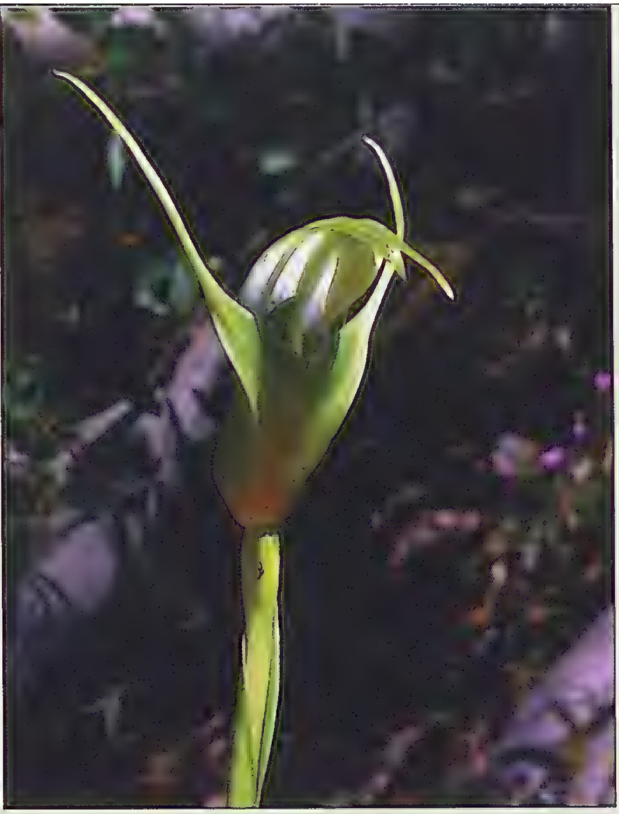
Text and photos by David Banks



Pterostylis falcata growing in the sub-alpine grasslands of Barrington Tops, NSW. This is a widespread summer flowering deciduous terrestrial species found through pockets of high elevation areas of South-eastern Australia.



Above left: *Pterostylis falcata* with the labellum in the "set" position. These orchids are often pollinated by fungus gnats.



Above right: *Pterostylis falcata* after the sensitive hinged labellum has been triggered, which traps the insect, allowing pollination to take place. The labellum is reset, and the insect allowed escape after 30-60 minutes.

Below: *Pterostylis falcata* a fine colony of Barrington Tops, NSW, growing at around 1400 metres above sea level. These orchids would be dormant tubers when this area frequently gets dusted with snow, heavy frosts are very common throughout winter.

Plectochilus Delta - A Hybrid that Flowers All Year!

by Ray Clement

We are used to having orchids that bloom in a particular season; hopefully we at least get flowers at some stage! Some orchids have long lived blooms, whilst others barely last a day.

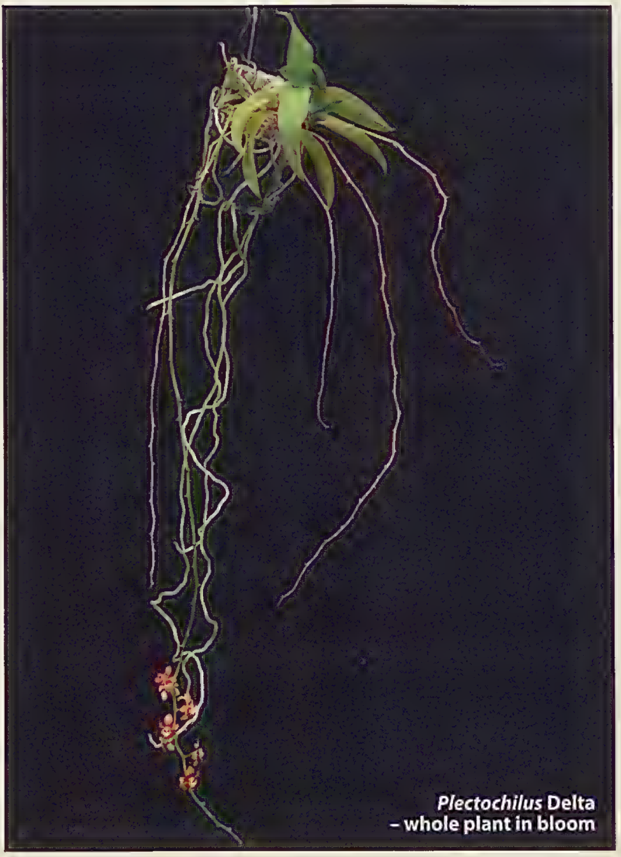
I recently noticed that a certain novelty "sarc" hybrid was still in bloom, despite having endured a string of hot summer days where the temps regularly nudged the forty degree mark. This plant seemed to be continually in flower, and I was quite surprised to see how long the inflorescence had grown.

This was a plant given to me as a young seedling by noted *Sarcochilus* hybridiser Neville Roper who made a number of breakthrough crosses as well as a range of novelties. It was a cross between *Sarcochilus* Riverdene as the pod parent with *Plectorrhiza tridentata* being the pollen donor. *Sarcochilus* Riverdene is a very interesting primary hybrid created and registered by Noel Jupp back in 1976, from the mating of *Sarcochilus hartmannii* with *Sarcochilus hirticalcar*.

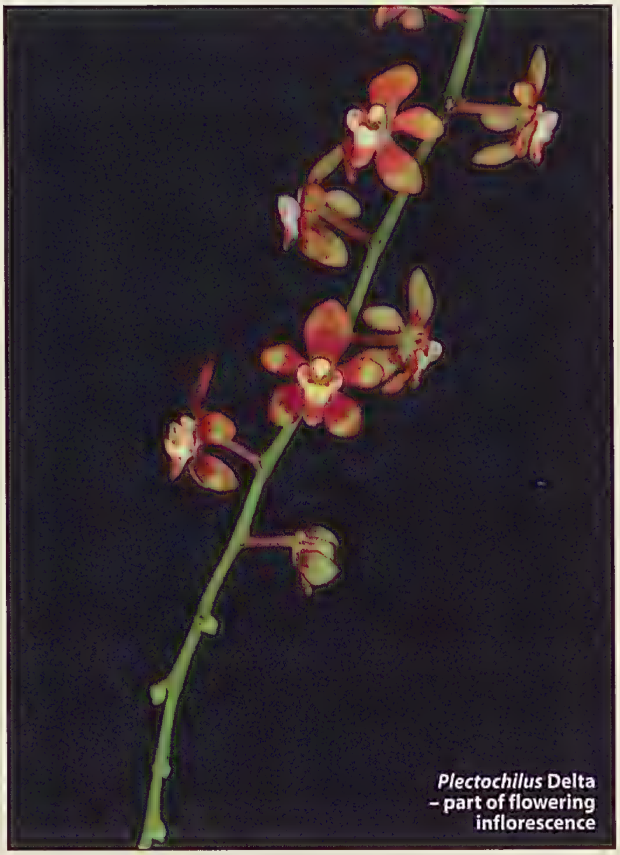
In an old Sutherland Shire Orchid Society newsletter, Neville wrote a short piece on *Sarcochilus hirticalcar*. In it he noted:

"As a parent *Sarcochilus hirticalcar* seems to provide some very desirable traits

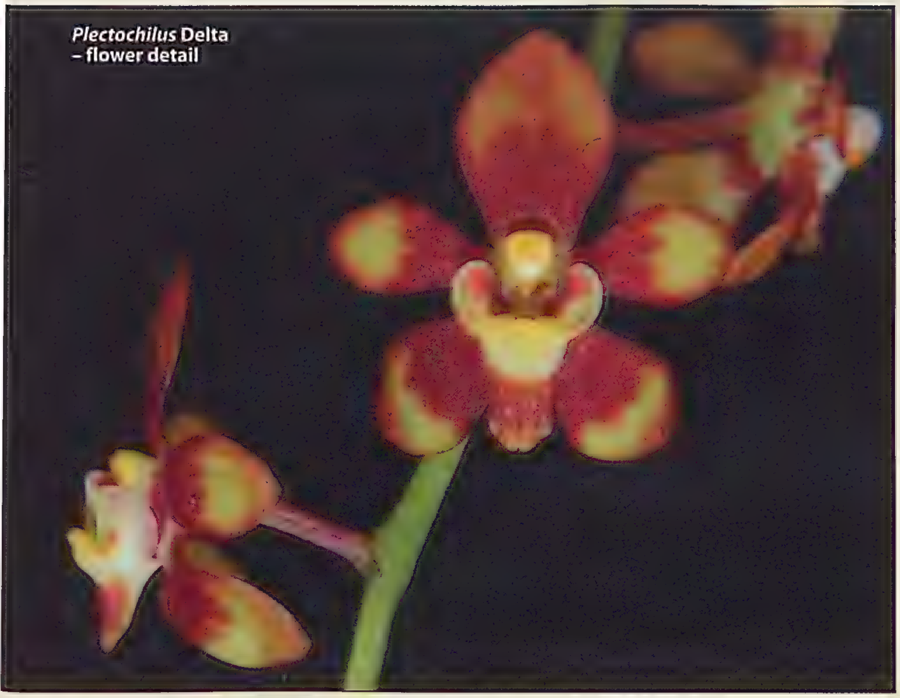
- It extends the flowering season into summer and seems to encourage its offspring to produce several flushes of blooms throughout the year. My larger plants of *Sarcochilus* Velvet are rarely without some flowers.
- Its progeny have excellent flower substance with very thick, long lasting flowers that generally resist reflexing.
- It not only contributes a variety of colours (green, yellow, red) to its offspring but allows or even enhances the colour inheritance from the other parent. A case in point would be *Sarcochilus* Nicky where *Sarcochilus hirticalcar* has been paired with *Sarcochilus fitzgeraldii* to produce a grex of predominantly red flowers.
- When combined with a partner having full shaped flowers such as *Sarcochilus hartmannii* the progeny mostly adopt the improved shape (as with *Sarcochilus* Riverdene) of the other parent rather than the sparse form of *Sarcochilus hirticalcar*."



***Plectochilus* Delta – whole plant in bloom**



***Plectochilus* Delta – part of flowering inflorescence**



***Plectochilus* Delta – flower detail**

Interestingly was also the cultural method employed by Neville. Many "sarc" hybrids are traditionally grown in pots. This seedling was growing in a half tube that was wired into a small cork slab. Giving the plant the option of "pot culture" as well as the freedom of "slab culture". Over time, most of the mix has disintegrated, but this hybrid obviously has been heavily influenced by the Tangle Root pollen parent (*Plectorrhiza*) as most of its roots are aerial and free of both the pot and mount! (As you can see in the photo).

This seedling bloomed within 12 months of Neville giving it to me. This is a pleasing trait regularly seen when an epiphytic species is used in the breeding. Also hybrids from *Sarcochilus hirticalcar* appear to be quick to mature. It has regularly produced flower spikes; however the current one seems to have exceeded all expectations.

The current inflorescence has already produced 24 blooms, currently has 7 flowers out, with at least 9 buds to come. 40 flowers in total off one flower stem! What makes this remarkable is that this is way more than double the number of blooms expected from such a cross, taking in the wonder of hybrid vigour. *Sarcochilus hartmannii* rarely will have 24 flowers on the stem, *Sarcochilus hirticalcar* may have 10 on strong vigorous plants (but only a few open at a time), with *Plectorrhiza tridentata* up to 16 blooms.

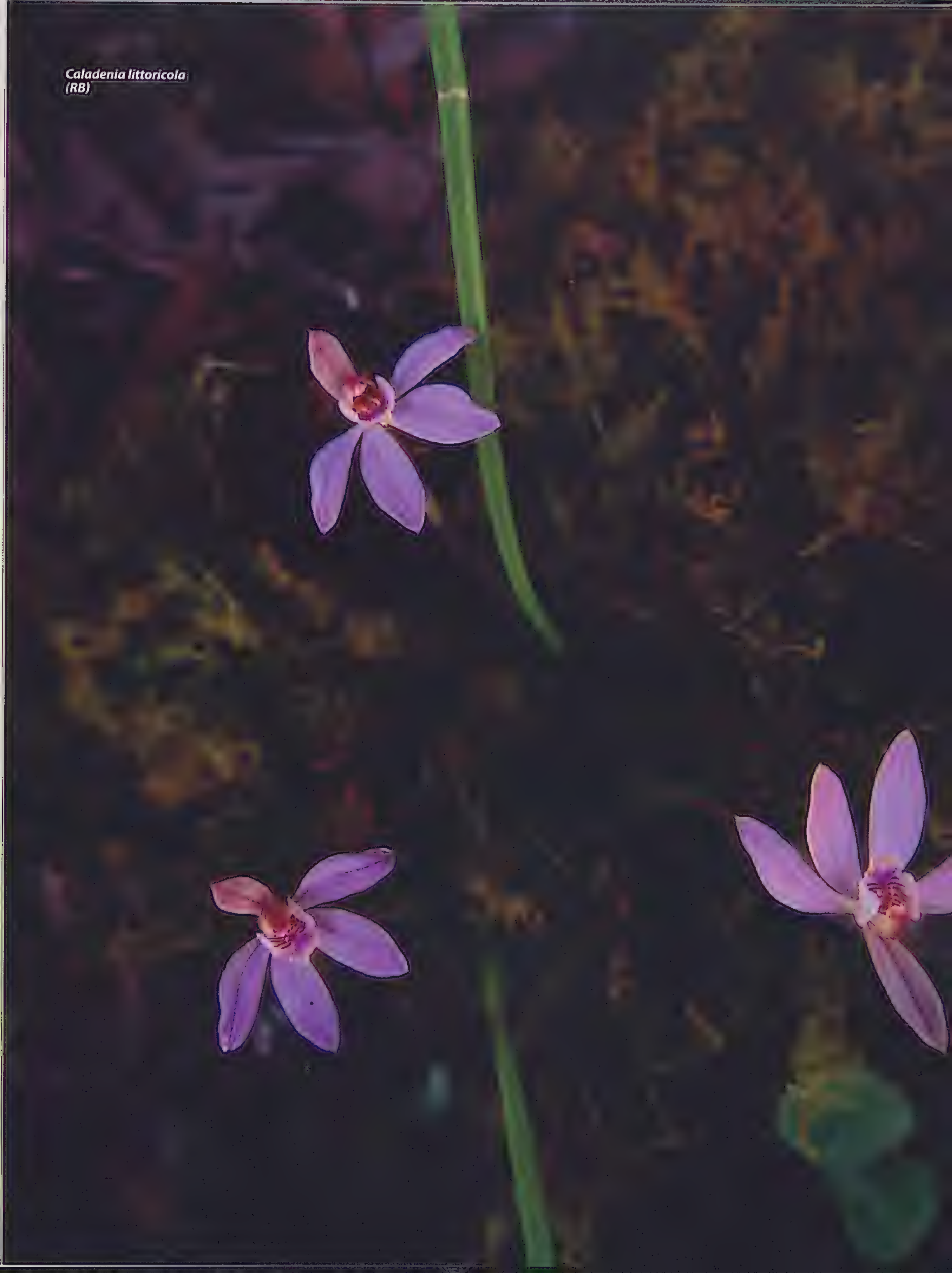
This hybrid was registered by Neville Roper in 2011 as *Plectochilus* Delta (*Sarcochilus* Riverdene x *Plectorrhiza tridentata*). Thank you to David Banks who took the photos that accompany these notes. ■

Ray Clement
Tinonee Orchid Nursery
Tinonee, NSW
www.tinoneeorchids.com

Sarcochilus hartmannii

Sarcochilus hirticalcar

Plectorrhiza tridentata



Caladenia littoricola
(RB)

A New Species of Dwarf Pink Finger Orchid *Caladenia* (Orchidaceae) from South Australia

by Robert J. Bates

Abstract: ***Caladenia littoricola*** is here described as new, a Type collection cited and images provided.

Key Words: Orchidaceae, *Caladenia carnea*, *Caladenia littoricola*, new species, South Australia, Australian flora.

Introduction: This paper describes a single new *Caladenia* species from southern coastal South Australia, of the *Caladenia carnea* R.Br complex from Eastern Australia and New Zealand. *Caladenia* in the strict sense is a genus of about fifty species, commonly called pink finger orchids.

Materials and methods: The description of this new species was made from fresh specimens. This species and its closest allies were studied in the field and in herbaria and all collections and photographs cited have been seen by the author. The Type collection was made by the author and flowering plants imaged in the field.

Taxonomy: ***Caladenia littoricola*** R.J. Bates ***sp. nov.***, with affinity to *Caladenia carnea* R. Br. but differing in its much smaller, single, self-pollinating flower (compared with usually several, outcrossing flowers in *Caladenia carnea*). The flower scape of *Caladenia littoricola* is usually less than half the length of the leaf while the scape of *Caladenia carnea* in contrast is often twice the length of the leaf. The curved labellum calli, general flower shape and thin textured segments and the quadricoloured labellum of the new species differ markedly from those of *Caladenia carnea*. At the other end of the scale *Caladenia littoricola* has much larger flowers than members of the tiny flowered *Caladenia pusilla* complex.

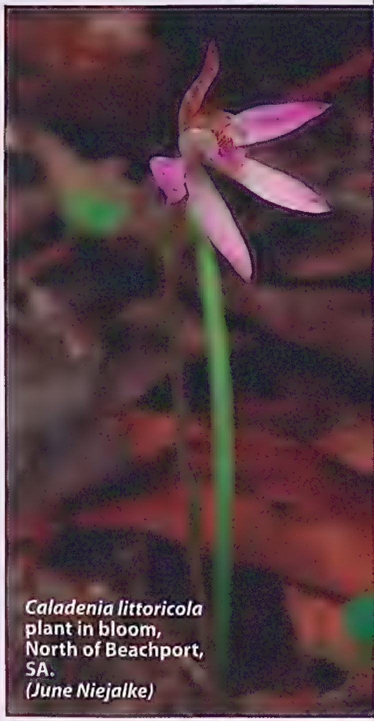
Type: South Australia, Southeast region, south of Nora Creina Bay along Bog Road between Lake St Clair and the sea, in loose sand and shell grit of coastal dunes, 15th Sept. 2013, *R. Bates 91888* (holo AD).

Illustration: Bates in *Orchids of South Australia* electronic versions 2008-2014 as *Caladenia* sp. "Selfing coastal dunes".

Description: *leaf* single, 10-15 cm x 1-1.4 mm wide obliquely erect, red or rarely green, glabrous to slightly hairy, sub soil section densely covered with tangled, moisture absorbent hairs, *tuber* buried to 3 cm deep, globular, hairy, to 10 mm diam. *flowering plants* to 10 cm tall; *scape* 2-6 cm long, less than 1 mm wide, sparsely covered with perpendicular hairs to 0.5 mm long, most tipped with a purple black, globular gland c. 0.1 mm diam; *sterile bract* on scape to 1 mm long, linear lanceolate and clasping. *Inflorescence* single flowered, floral bract mostly glabrous, lanceolate, 3-4 mm x 0.5 mm clasping. *Ovary* c. 3 mm x 1 mm, strongly ribbed, the ribs red, densely glandular hairy, the hairs to 0.2 mm long, terminal glands globular, purple black. *Flower* pink, 15-20 mm wide; *sepals* 8-10 mm x 4 mm, ovate- lanceolate, rounded to sub acute, glandular outside, the glands dark, immersed or on short stalks; *dorsal sepal* erect; *lateral sepals* horizontal in front of flower, margins undulate; *petals* similar but smaller, 7-8 mm long, pink, pale below spreading horizontally, tips mucronate. *Labellum* quadricoloured, c. 5 mm long, to 4 mm across when flattened, trilobed, the *side lobes* white with red ornamentation on inner lamina, curved, erect and almost clasping the column, *mid lobe* yellow, stained pink, to 2 mm long, decurved strongly, with dentate margins to the acute apex; *labellum calli* irregular, yellow, linear-falcate, to 0.3 mm long, strongly curved at different angles, not extending onto mid lobe. *Column* to 3 mm tall, 2 mm wide, strongly arched, glandular on back, greenish white with red bars; *anther cap* pink, *pollinia* loose, often collapsing onto the stigma. *Stigma* reniform to 0.4 mm wide, set just below anther. The flowers of *Caladenia littoricola* are short lived and usually self pollinated.

Distribution and ecology: Restricted and endemic to South Australia on the 'Limestone Coast' of the South-east region from Port MacDonnell in the south to Kingston, always within hearing of the sea and often between the sea and coastal lakes. Usually growing under thick coastal mallee and honey myrtles in loose sand and shell grit on the inland side of the dunes, often in leaf litter and patches of sparse, short lived mosses, with other orchids; notably the rare green spider orchid *Arachnorchis richardsiorum*, abundant coastal pink fairy orchids, *Caladenia latifolia*, helmet orchids *Corysanthes despectans* and *Corysanthes expansus* and coastal gnat orchid *Cyrtostylis robusta*. Flowering is brief and usually during early to mid September. The species can form large local populations, sometimes containing thousands of plants.

Recognition: Characterised by its fragile, single, short lived flower on a short filamentous scape and the delicate, wispy leaf which is usually longer than the scape. The flowers seem strangely large for such tiny plants and have short, soft pink segments, the labellum is broad and usually quadricolored and the labellum calli are strangely irregular. *Caladenia littoricola* is very habitat specific with a short growing season and very brief flowering.



***Caladenia littoricola* plant in bloom, North of Beachport, SA. (June Niejalke)**

Similar species: *Caladenia littoricola* is not closely related to any other species but has been confused with *Caladenia mentiens* which has a taller scape, flowers only half the size and darker on the outside of the segments. The two species have different habitat requirements and do not overlap geographically. *Caladenia carnea*, the type species of the genus, (syn. *Petalochilus carneus*) is a much larger plant with often multiple, large but narrow segmented flowers on tall scapes.

Notes: This species was not collected until 2006 presumably because of its short flowering season, difficult to access habitat, (mostly on private property) and cryptic nature i.e. often hidden among large colonies of pink *Caladenia latifolia*.

Conservation rating: 2Vi according to criteria of Briggs & Leigh (1996). It is threatened by predicted future coastal development.

Etymology: the name derives from Latin *littoricola* 'of the coast' i.e. referring to the coastal sand dune habitat of *Caladenia littoricola*.

Other specimens: from SOUTH AUSTRALIA at AD. Southeast region : Private road to the coast south of Sunlands (from Bog Road) adjacent Lake St. Clair, 3 Oct. 2007, *R. Bates* 74495; Little Dip C.P., west of Old Man Lake, in coastal dunes with *Corysanthes despectans* and *Cyrtostylis robusta*, 14 Sept. 2013, *R. Bates* 91881 and *N. Schultz*.

Acknowledgements: Thanks are due to Juergen Kellermann for help with specimens at AD, the many members of the Native Orchid Society of South Australia (NOSSA) for companionship during field trips, especially Barbie & Ken Bayley. Thanks to June Niejalke for allowing her images to be used in this publication and to my partner Novi for her help.

Literature:

- Bates R. (2008-2014) *Orchids of South Australia* electronic versions, NOSSA.
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- Jones. D. L. (2006) *Native Orchids of Australia* (complete guide), Reed New Holland. ■

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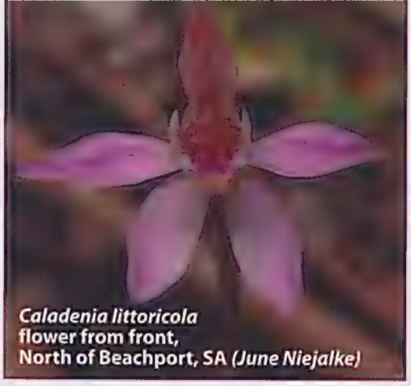
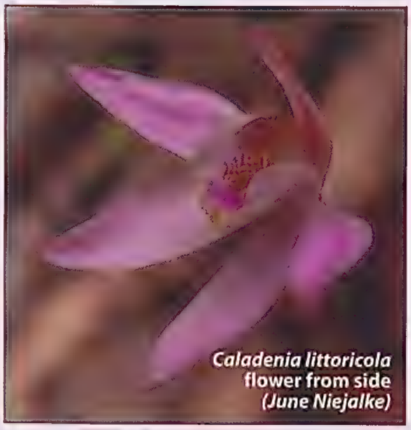
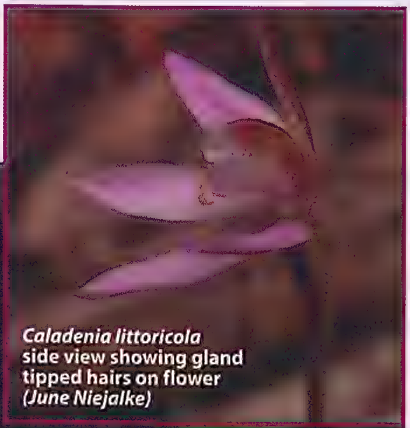


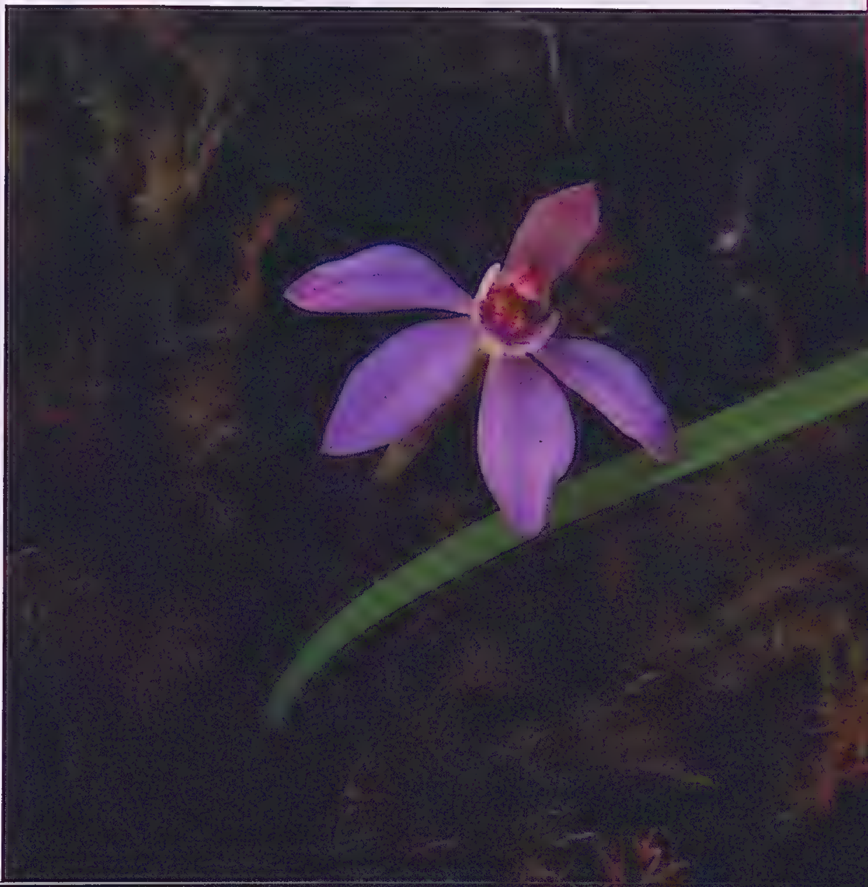
Caladenia littoricola flower from front, North of Beachport, SA *(June Niejalke)*



Caladenia littoricola flower from side *(June Niejalke)*



Caladenia littoricola side view showing gland tipped hairs on flower *(June Niejalke)*



Caladenia littoricola group showing long leaves & short scape *(RB)*

A First Time for Everything

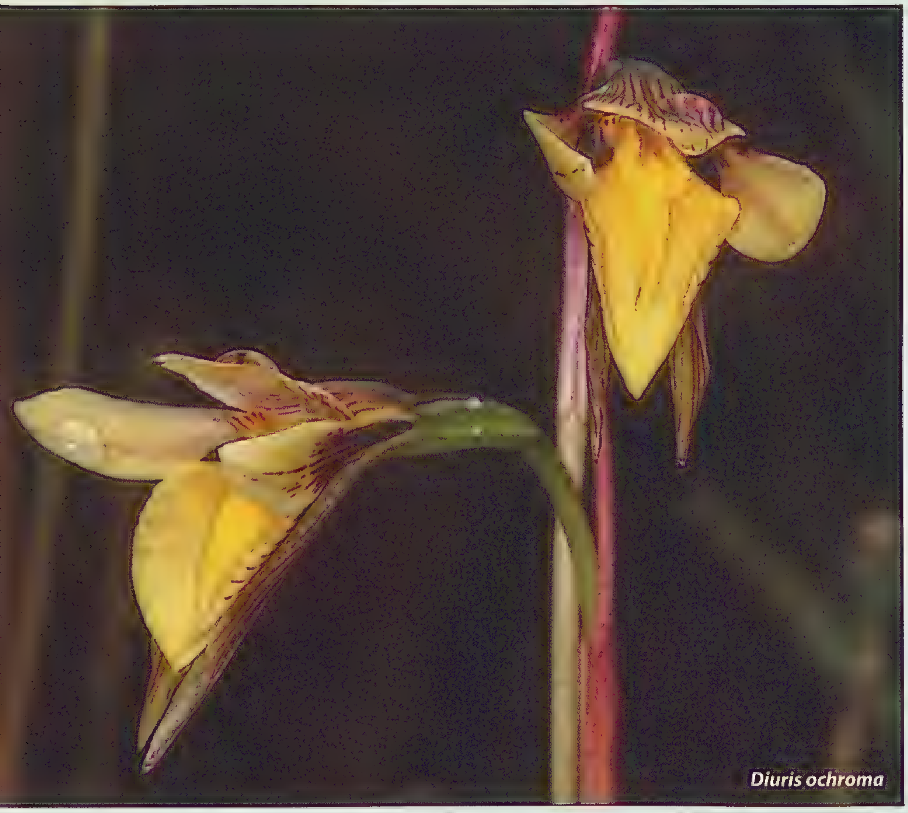
by Alan Stephenson

I have acted as the Australian Orchid Council (AOC) Conservation Director for over a decade and in that time I have written only one letter of thanks to a Conservation Minister, although I did write a thank you letter to another Conservation Minister in the late 1990's. This was to then NSW Conservation Minister Pam Allen, congratulating her for the dedication of a local Regional Park. The park is almost in the centre of Nowra, around and including a shallow gorge and it had been the subject of agitation by many local conservationists for 20 years. Since then the local council has unsuccessfully tried numerous methods to overturn that decision, including the destruction of three plants of an endangered orchid, *Genoplesium baueri*. I should add the orchid destruction was not accidental unless you consider the scraping clean of an area 1.5 metres x 2.5 metres in a 25 hectare park at the precise location for the three orchids to be accidental.

However the most recent and only official letter of thanks went to the new Victorian Environment Minister Hon. Lisa Neville. In what would have been her first official act the minister has repealed an act of parliament which planned to re-introduce cattle grazing and horses into what the previous government termed "the most pristine Alpine Park in Australia." This is the High Country Park which was subject to a so-called trial to legitimise the introduction of cattle after an earlier labour government had rid the area of hard hoofed animals. The trial would have exposed 33% of all Pale Golden Moths Orchid - *Diuris ochroma* plants to grazing, however the trial generally classed as a sham with all plants eventually exposed to cattle grazing and wild horses.

Diuris ochroma is currently listed as Vulnerable under the Commonwealth Environment Protection and Biodiversity Conservation Act 1999 (EPBC Act) and as Threatened in Victoria under the Flora & Fauna Guarantee Act 1988 (FFG Act). The NSW Scientific Committee recently determined that *Diuris ochroma* meets criteria for listing as Endangered in NSW under the Threatened Species Conservation Act 1995 (TSC Act), based on information available for the species.

Diuris ochroma is currently known from a large population in Victoria and a single population in New South Wales. This NSW population consists of a number of small colonies scattered over an area of approximately 4 km square. Two further populations of *Diuris ochroma* are also known to have occurred in Kosciuszko National Park although they have not been observed for over 30 years. These records are considered reliable as they are based on vouchers in the National Parks herbarium in Kosciuszko NP.



Diuris ochroma

The misguided judgement behind the consideration of cattle grazing was that their grazing was said to be a bushfire inhibitor. This theory has been easily discounted by official government records maintained since the 1880's. The *Lateline* program on ABC television a few years ago saw the Director General of National Parks produce records which proved all major bushfires in that large area occurred during times of heavy cattle grazing and therefore failed to reduce vegetation to a degree which would negate fire risks. At the same time a large number of wild horses were also using the park as a large "home paddock". As my father was working in that area during the 1939 "Black Friday" bushfires I was made acutely aware of the damage to people and property, as he in company with a large number of others escaped with only the clothes they were wearing at the time.

Apart from obvious damage to the habitat of *Diuris ochroma* (Kangaroo Grass, *Themeda triandra*), large areas of sphagnum bogs would be damaged by cattle and horses and while cattle are essential to all meat eating Australians, both are introduced hard hoofed animals and we must remember, Australia has no native animals with hard hooves. This is an old story of "preserve the habitat and species within that habitat will continue as they have for millennia".

I have written two submissions against the proposal to re-introduce cattle and horses into this Alpine Park and during the submission period the Snowy River Cattlemen's Association has tried to pull the heartstrings with continued sentimental referencing of *The Man from Snowy River*. However modern day Australians should realise practices of the 1880's have no place in today's world, as we have long ago realised we cannot exist on sentiment and clean water is more essential to an increasing population.

Thanks to Andrew Dilley of ANOS Victoria for his photos of the vulnerable *Diuris ochroma*.

Alan Stephenson
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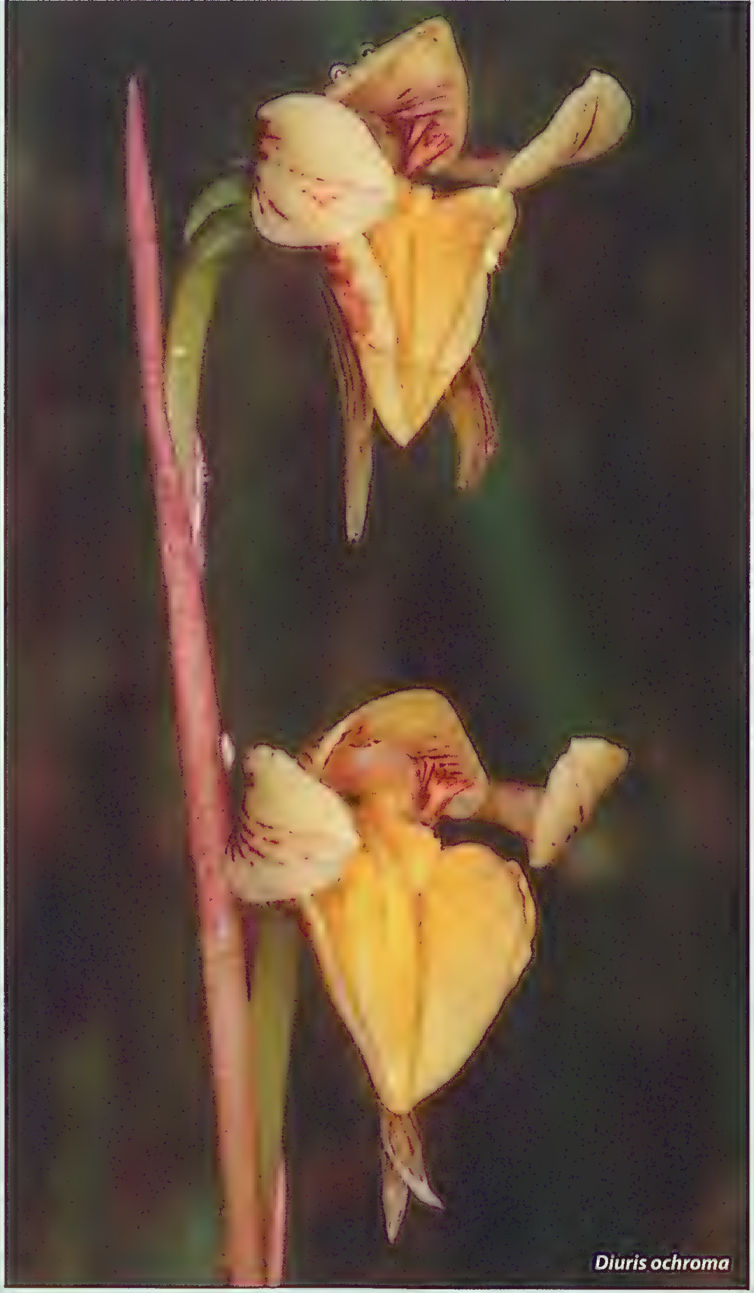

Diuris ochroma

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Orchid Road Test

by Sam Cowie

Miltoniopsis Andrea West 'Wild Wild West'

Previously at Roadtest we've looked at some easy or relatively easy orchids to grow. This time we're going to look at one of the harder, although very beautiful, *Miltoniopsis* that has given me quite some grief to get right. Generally I find most growers struggle with *Miltoniopsis* as they prefer to remain moist but very well drained, and commonly will fail either through drying out or being allowed to sit in water (will kill within days). As mentioned previous in other Roadtests the pot in pot technique will be very beneficial to beginner growers of *Miltoniopsis*, as this keeps the humidity up around the pot and root system. That being said, some *Miltoniopsis* are easy growers like Lillian Nakamoto, and others are just harder.

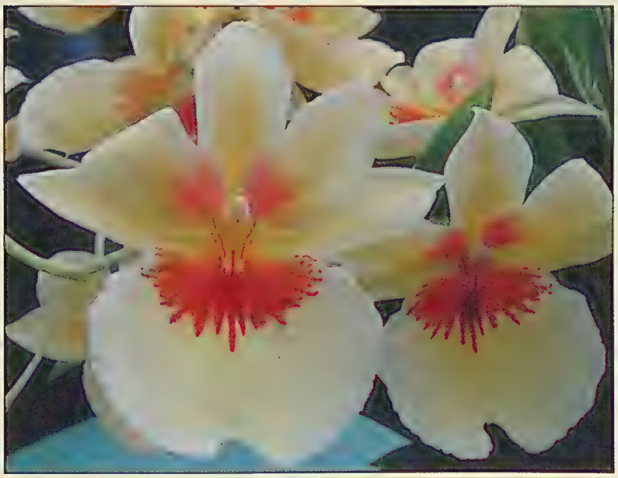
Miltoniopsis Andrea West was bred by Mr Glen Barfield of Okika in Hawaii and registered back in 2001, and is the end result of parents with quite long and complex heritage. Although the parentage is a long way separated from the original species, like most *Miltoniopsis* breeding, it is really only produced from 3 species (*roezlii*, *phalaenopsis* and *vexillaria*). Although Orchidwiz lists an unknown parent in the breakdown, I wouldn't be surprised if it wasn't one of the three already present. This is much the same as Lillian Nakamoto, except that Lillian Nakamoto has a much larger percentage of *Miltoniopsis roezlii* that gives it the easier growing characteristics. Recent discussion with an associate who grows a plant of *Miltoniopsis phalaenopsis* (tetraploid form) highlighted how much harder this species is to grow when compared to *Miltoniopsis roezlii*.

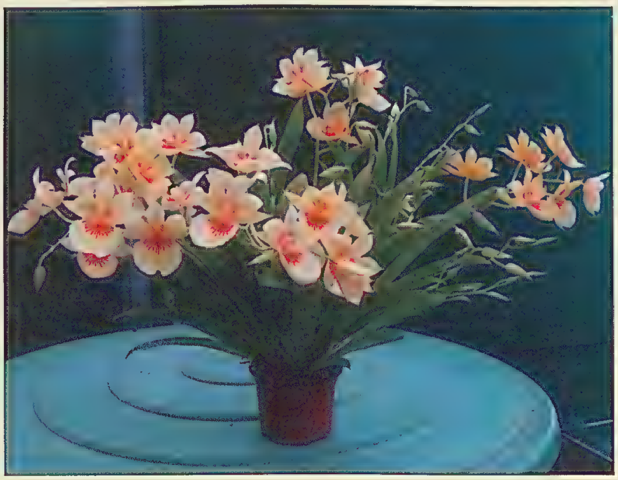
Now I'm pretty sure that you're all looking at the photos with this article and wondering why I class this plant as hard to grow, well it all comes down to the roots. This wondering probably only grows after I let you know that the plant in the photos is only 4 years out of flask. After putting this plant into production back in September 2010 we started to learn how it doesn't like root disturbance. Now I will state the deflask method at the time wasn't best suited to Andrea West and the loss rate reflected that, but what survived deflask then suffered greatly when being potted up from plug to pot. To those growers that still think community pots are the best way to deflask, well with Andrea West your losses would be even worse. We have fixed this with a new deflask method that eliminates root disturbance when going from plug to pot and hope that the next batch of Andrea West do much better.

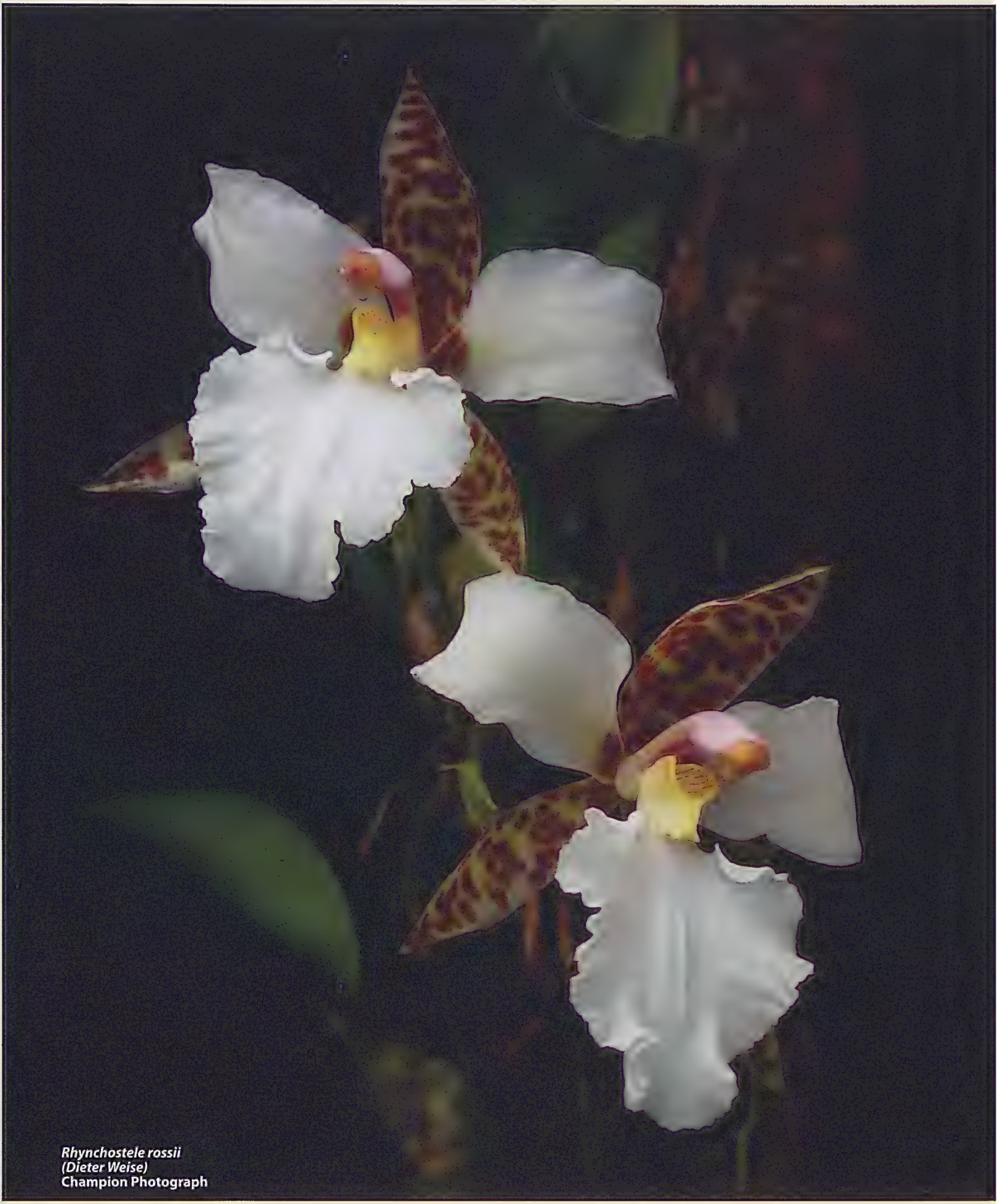
So now that you know that Andrea West doesn't like root disturbance, the best way to grow this plant is to only pot it up into larger pots as it outgrows its current pot, without disturbing the root system. I'm yet to divide an Andrea West, so all I can recommend is to do the division in late winter when you notice active root growth and make sure you damage the existing root system as little as possible. Seaweed supplements maybe effective in re-establishing the plant after division. Outside of the root system issues Andrea West seems quite happy in our conditions in South East Queensland, tolerating highs of 42 Celsius and lows of 5 Celsius without breaking its stride. It prefers to be under a solid cover, as like all *Miltoniopsis* it doesn't like rain on it or wet foliage at night.

I've found Andrea West to be a compact grower, with shorter foliage than other *Miltoniopsis* varieties, and quite happy to be in a smaller pot packed full of roots. As you can see from the photos the plant is only in a 130mm pot for its size. It consistently double spikes on each growth, with the occasional triple spiked growth on larger plants, each spike carrying 6 flowers. The flower size is slightly smaller than other *Miltoniopsis* that we produce. Flower size isn't affected by the warmer climate, although growers in cooler climates may get a better substance flower with more pink and a deeper yellow. Like most *Miltoniopsis* flowering during cooler weather will affect the flower substance and colour.

Sam Cowie
Kin Kin, Queensland







Rhynchostele rossii
(Dieter Weise)
Champion Photograph

Odontoglossum wyattianum
[syn. *Oncidium wyattianum*]
(Dieter Weise)

Melbourne Orchid Photographic Exhibition 2014

The 2014 Victorian Art and Photographic exhibitions were a great success having more entries from a number of different artists and photographers. None of the artists are orchid growers so we are hoping that this is attracting a new group of visitors to our show.

Here we have included a range of images from the recent Melbourne Exhibition of Orchid Art and Photography.

We were very fortunate to have Michaels Camera Store, one of the largest camera shops in Melbourne sponsor our exhibition together with Empathy Photographics a photographic school. We were also privileged to have some very generous art sponsors: Canson Australia a major art paper supplier and Mirror Graphics a framing company.

The Melbourne Orchid Spectacular moved to a new venue about 3 times the size of the venue we used for previous shows and this allowed us to add several new features. Our major sponsors had more space to setup impressive displays, the talks area was a feature with talks continuing almost all weekend. The attendance was better than last year which surprised us considering that the show had moved to a new venue.

The Bromeliad Society of Victoria setup a display and we hope to include several other plant clubs next year to make the whole event even more impressive.

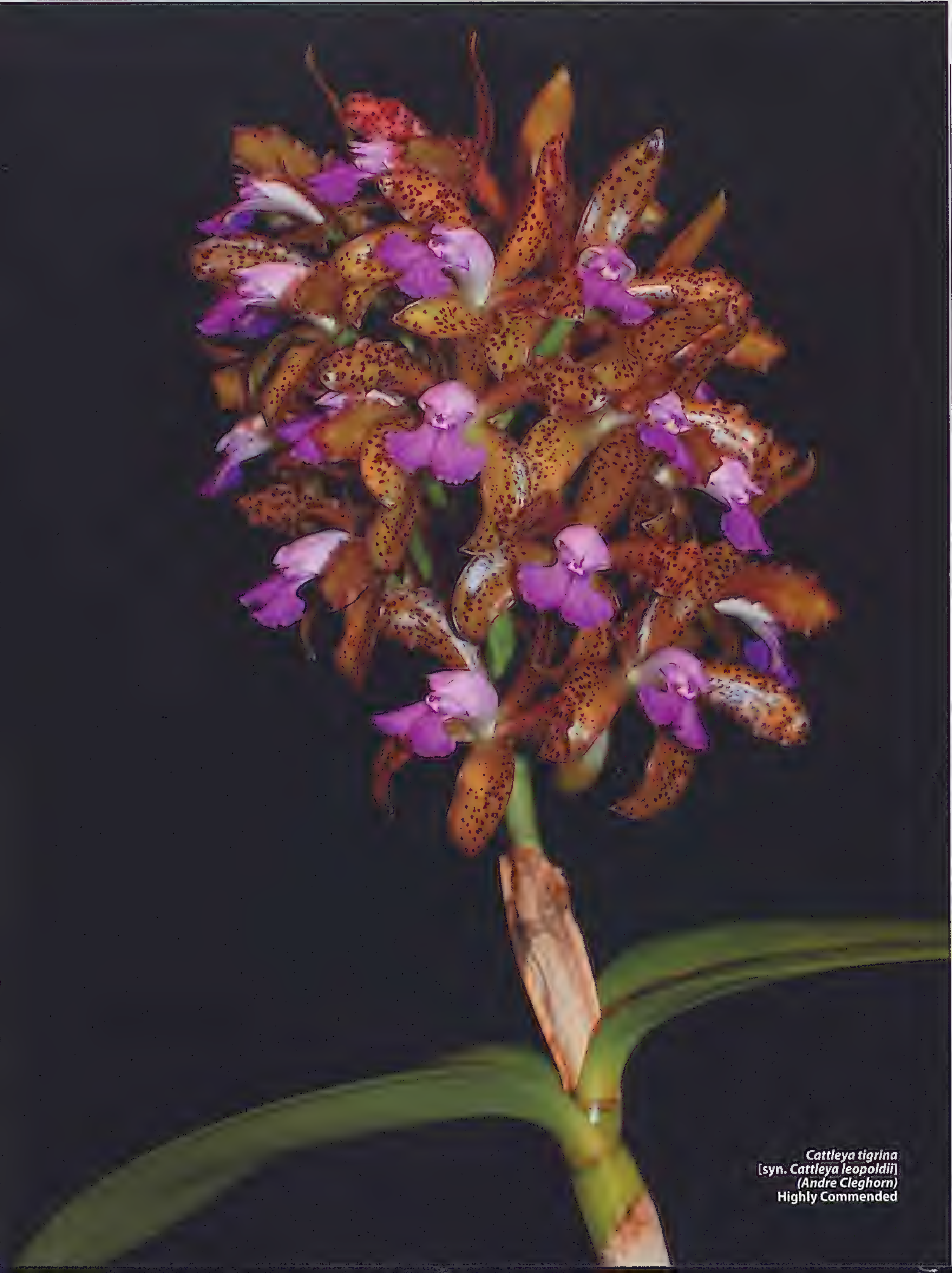
Grand Champion Photograph went to Dieter Weise for his superb image of the Mexican species *Rhynchostele rossii*. ■

Andre Cleghorn
OSCOV Conservation Officer &
Photographic Exhibition Coordinator
Email: andre@alphalink.com.au

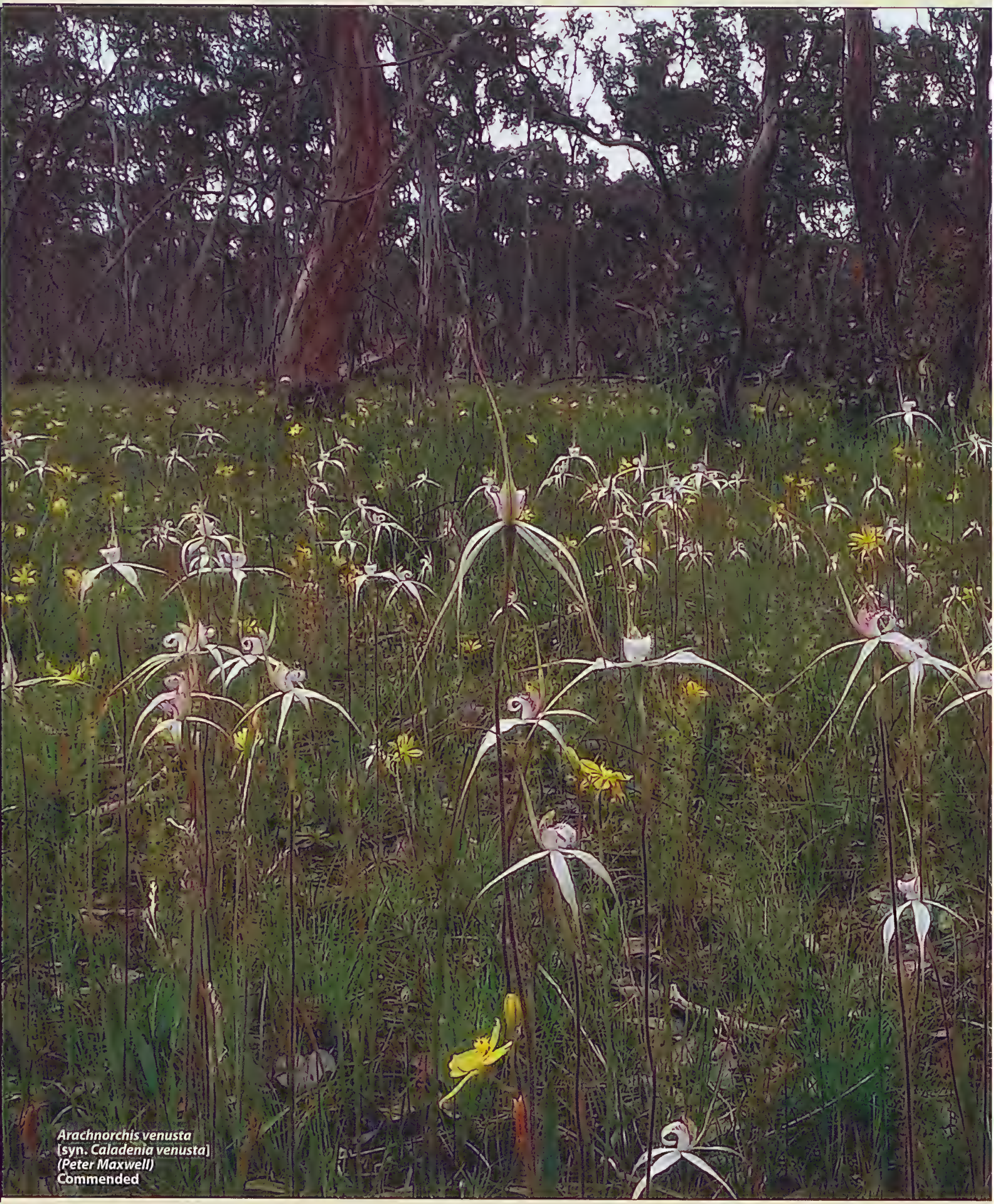
Catasetum atratum
(Gordon Young)

Dendrobium lawesii
– bicolour form
(Andre Cleghorn)

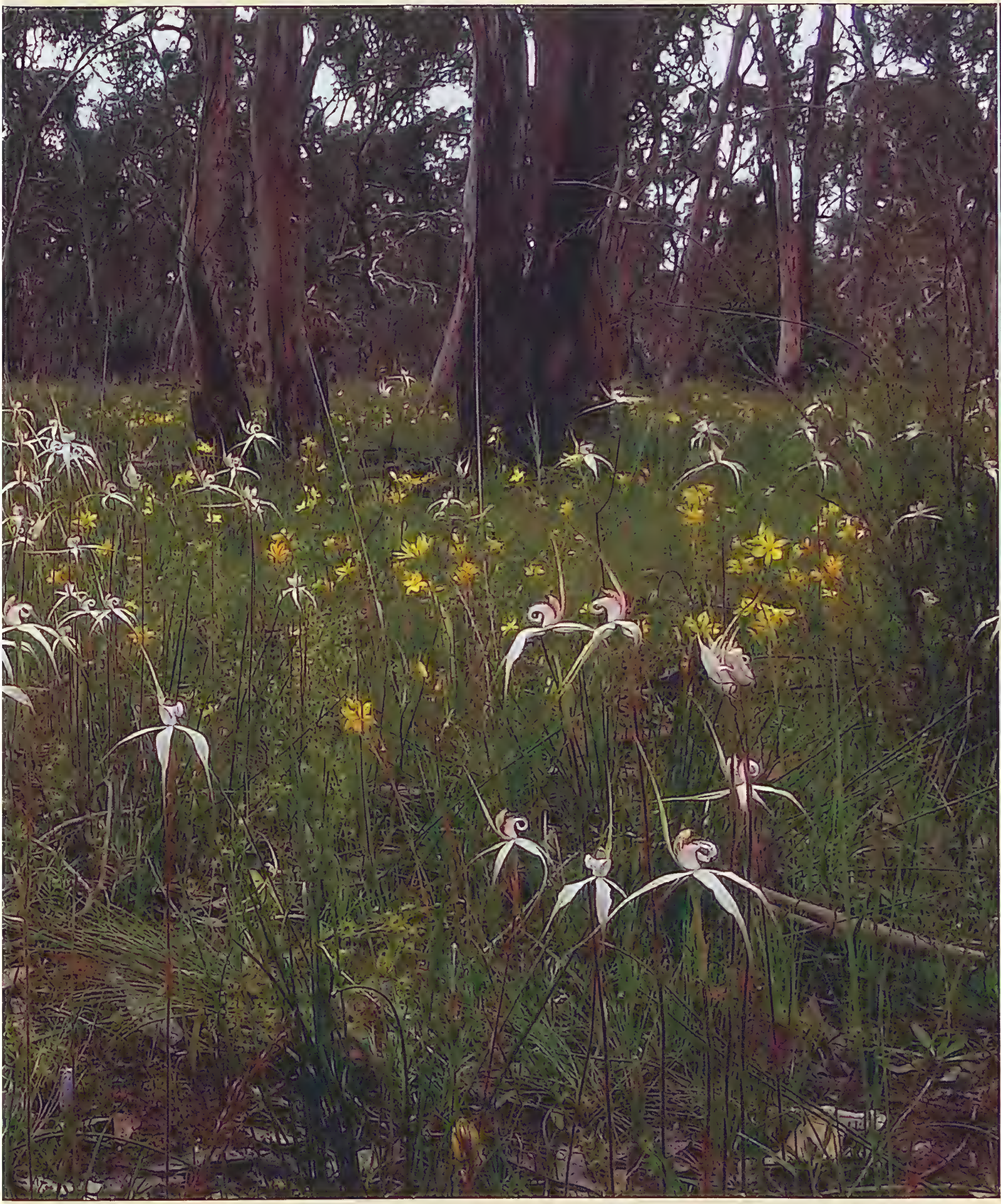
Cattleya amethystoglossa
(Astrid Weise)

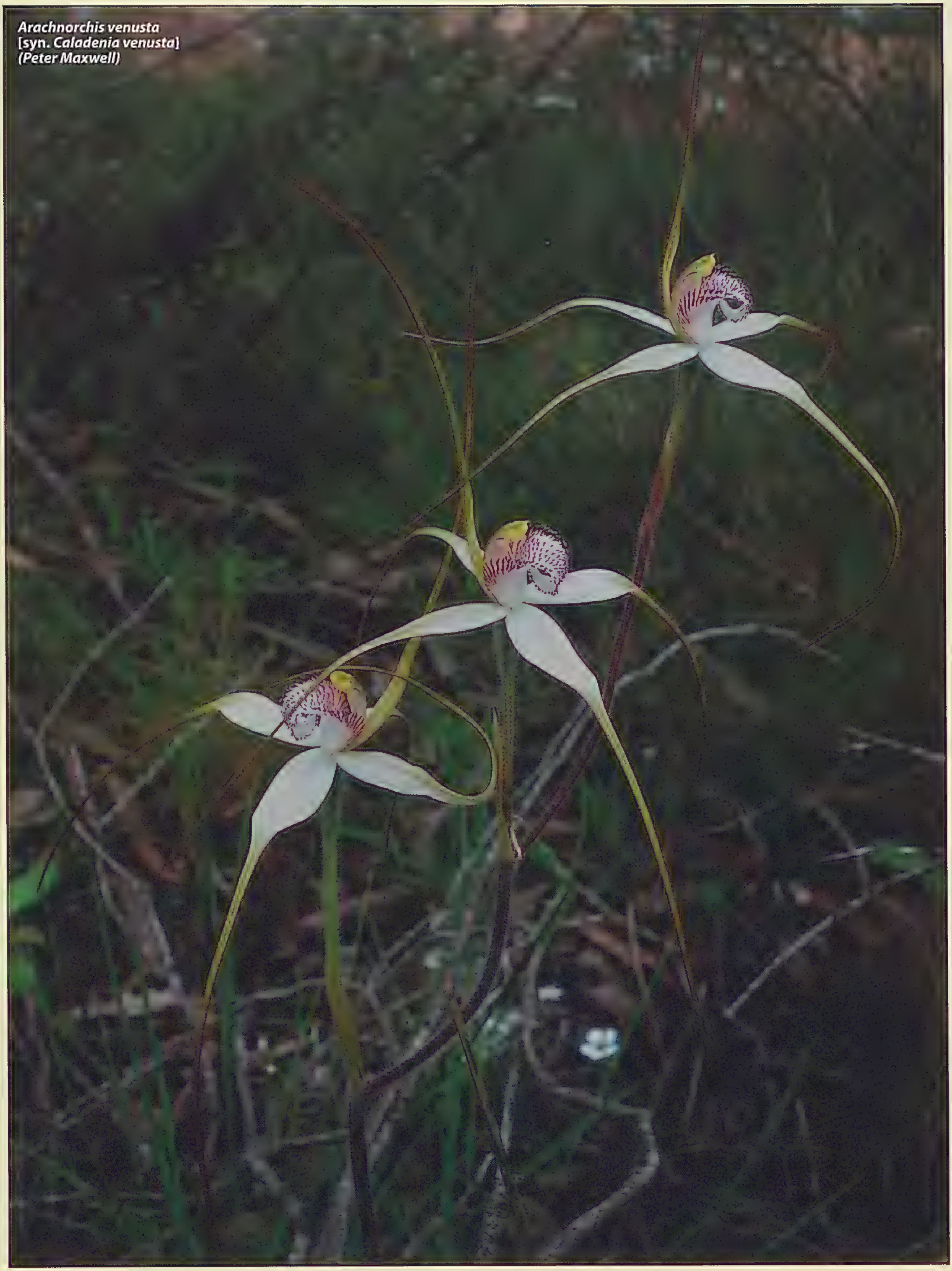


Cattleya tigrina
[syn. *Cattleya leopoldii*]
(Andre Cleghorn)
Highly Commended

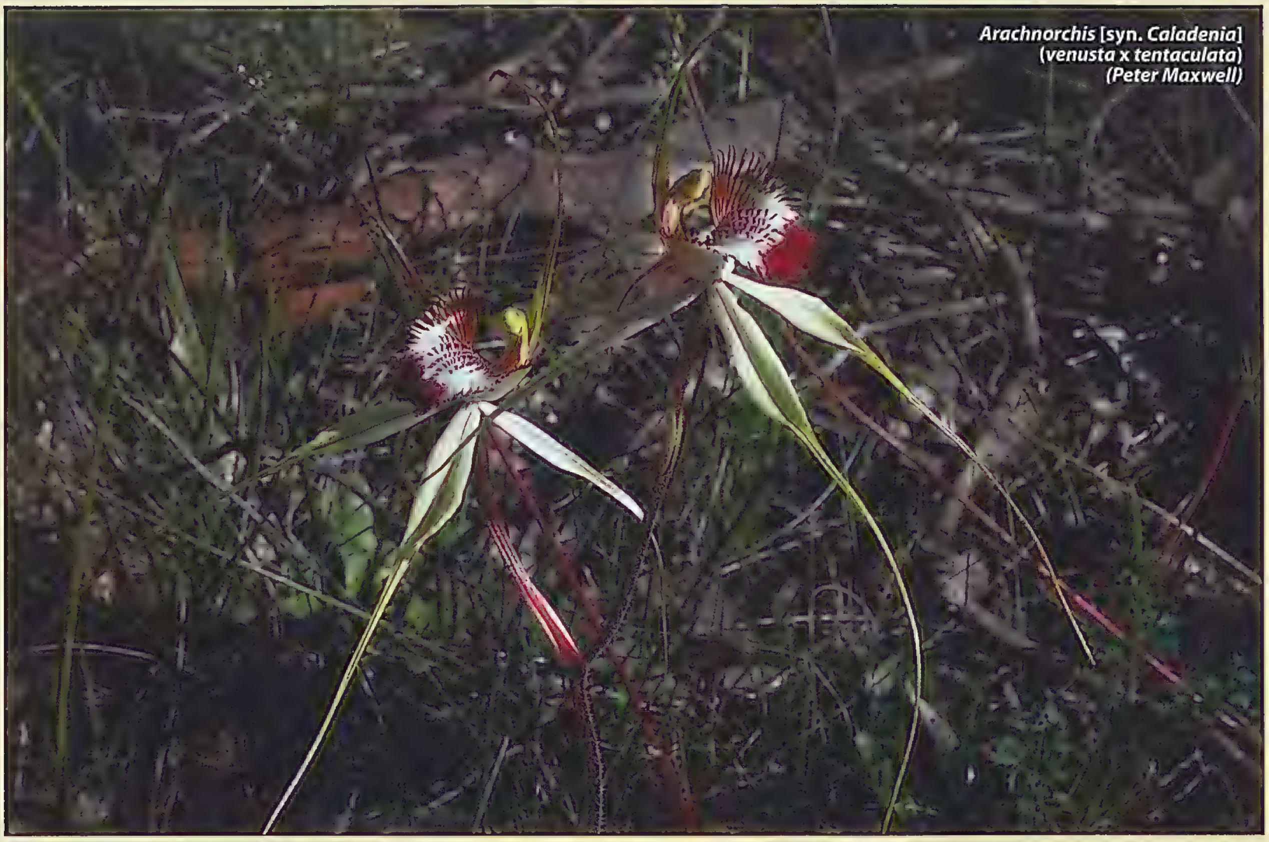


Arachnorchis venusta
[syn. *Caladenia venusta*]
(Peter Maxwell)
Commended

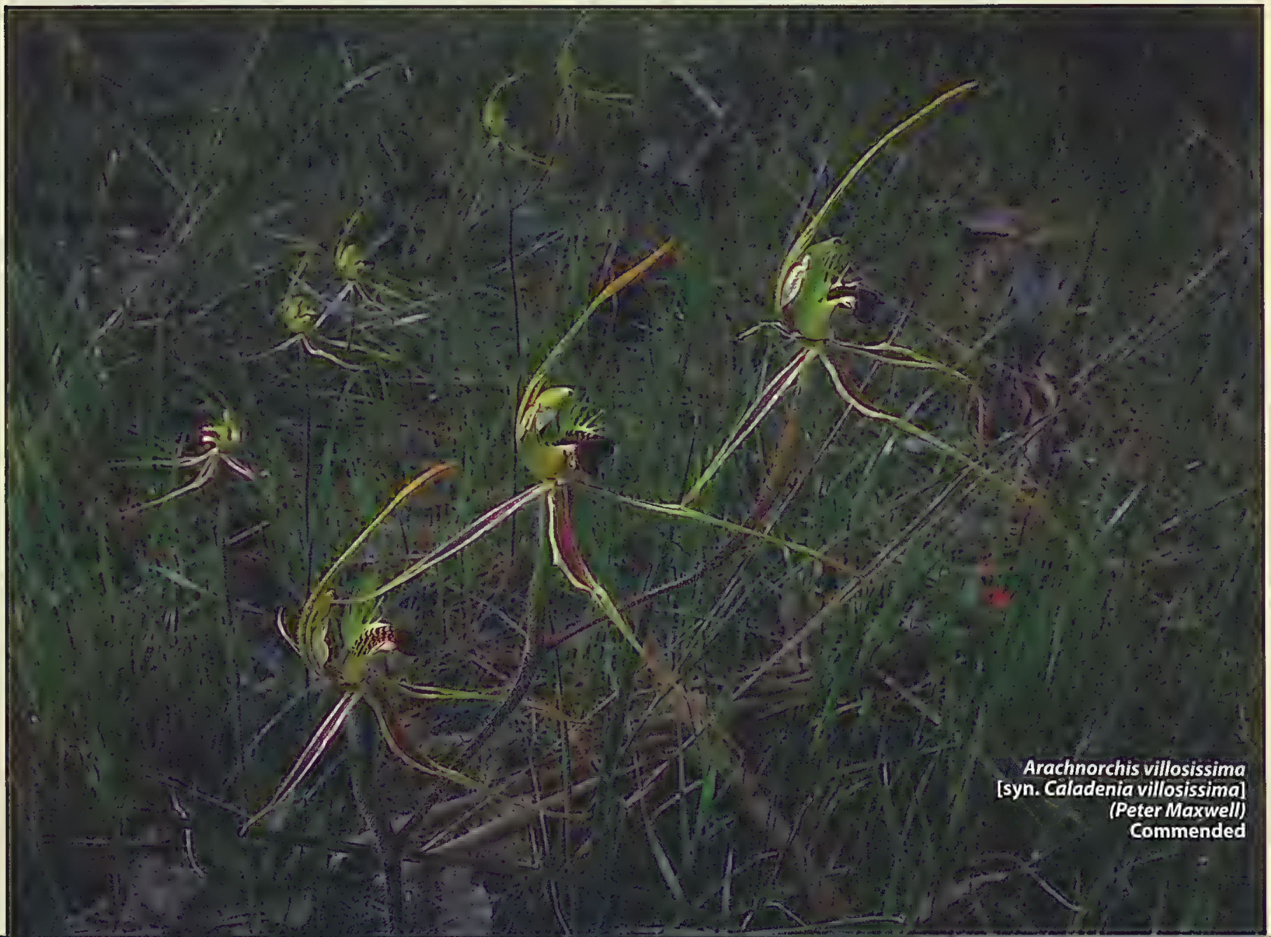




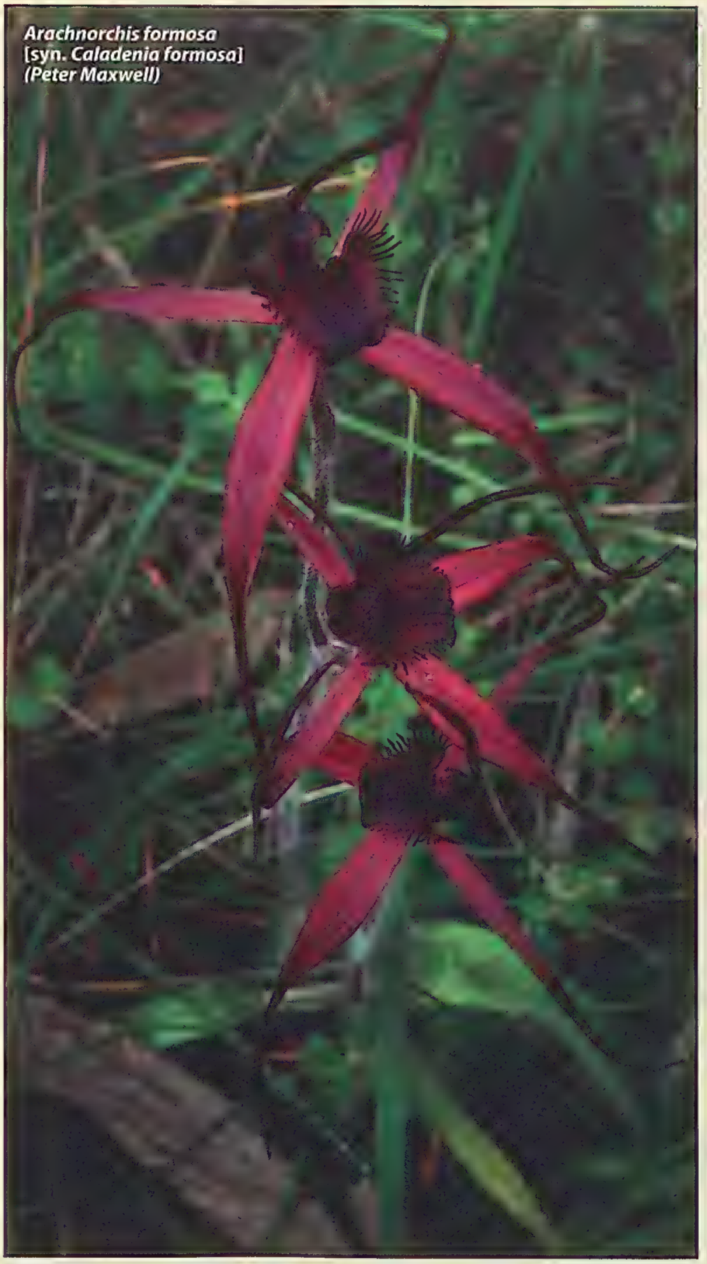
Arachnorchis venusta
[syn. *Caladenia venusta*]
(Peter Maxwell)



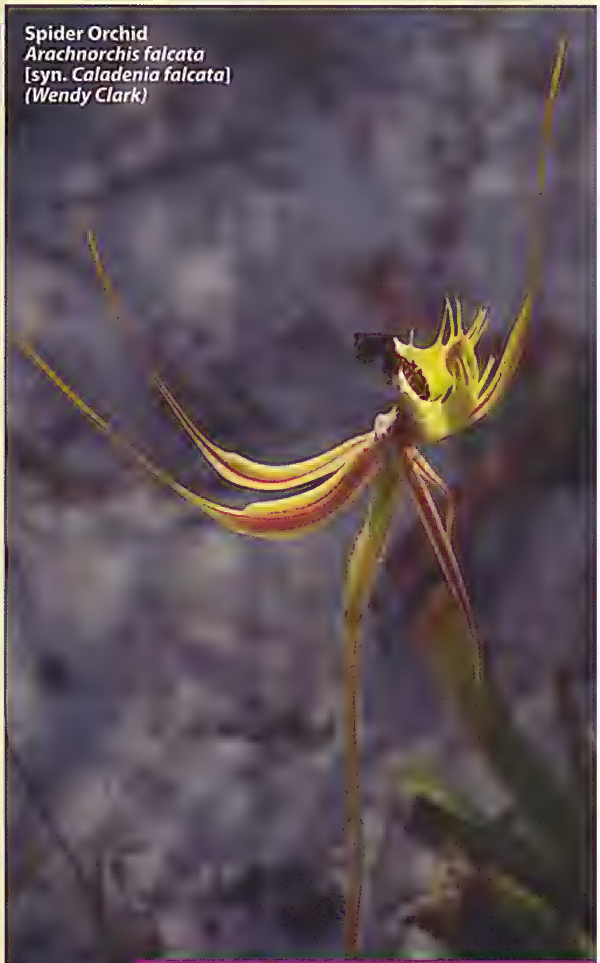
Arachnorchis [syn. *Caladenia*]
(*venusta* x *tentaculata*)
(*Peter Maxwell*)



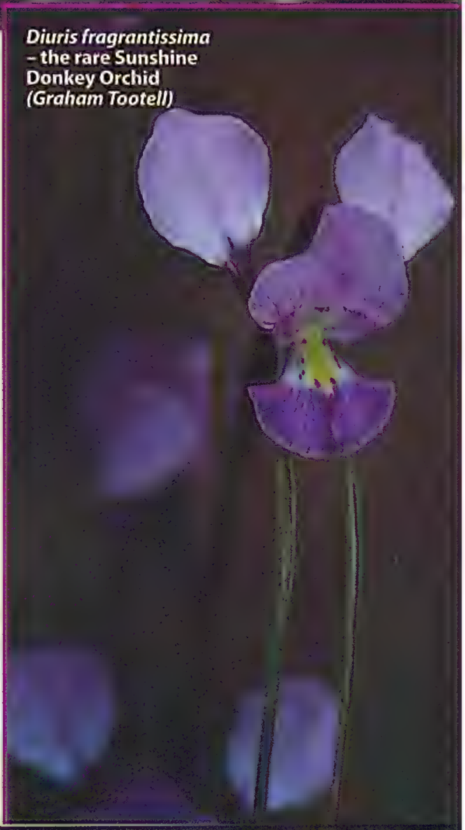
Arachnorchis villosissima
[syn. *Caladenia villosissima*]
(*Peter Maxwell*)
Commended



Arachnorchis formosa
[syn. *Caladenia formosa*]
(Peter Maxwell)



Spider Orchid
Arachnorchis falcata
[syn. *Caladenia falcata*]
(Wendy Clark)



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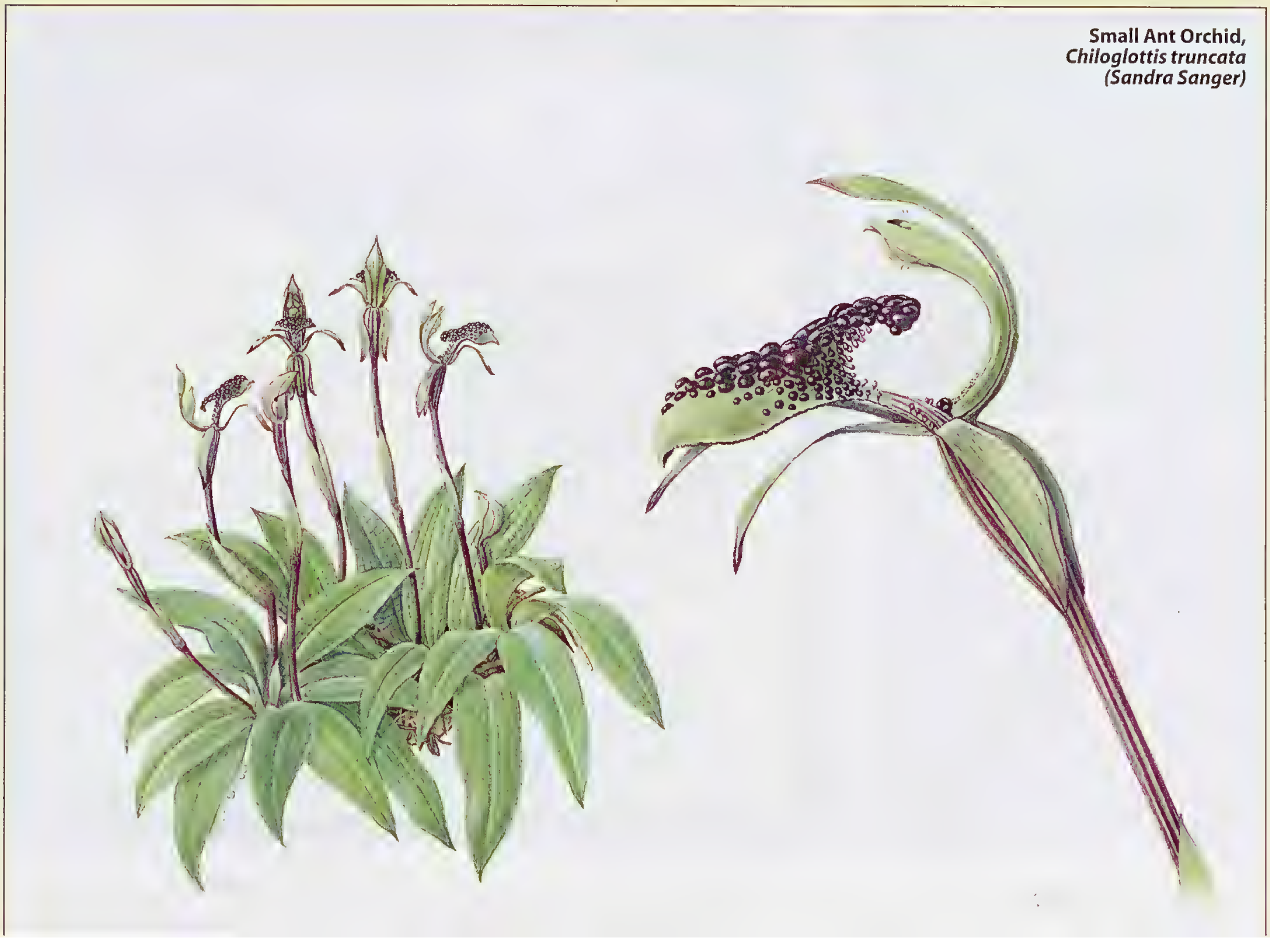

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AOR 004

New Species of *Oligochaetochilus* (Orchidaceae) from Western Australia - 2

by David L. Jones and Christopher J. French

Abstract

Oligochaetochilus exsertus, *Oligochaetochilus hadrus* and *Oligochaetochilus zebrinus* are described here as new. Notes are included on their distribution, ecology and conservation status; their distinguishing features are compared with those of allied taxa.

Key Words

Orchidaceae, *Oligochaetochilus exsertus*, *Oligochaetochilus hadrus*, *Oligochaetochilus zebrinus*, *Oligochaetochilus spathulatus*, new species, Western Australia, Australian flora.

Introduction

This is the second paper in a series dealing with new species of *Oligochaetochilus* from Western Australia. The first paper described three new species - *Oligochaetochilus elegantissimus*, *Oligochaetochilus macrosceles* and *Oligochaetochilus percultus* (Jones & French 2014). This paper describes another three and brings the number of species of *Oligochaetochilus* described from Western Australia to fourteen. Several more await formal recognition.

Materials and Methods

Descriptions of the new taxa were made from fresh specimens. Unless otherwise indicated, all types of *Oligochaetochilus* relevant to this study (or photographs thereof), and collections cited, have been seen by us.

Taxonomy

1. *Oligochaetochilus exsertus* D.L.Jones, ***sp. nov.*** With affinity to *Oligochaetochilus spathulatus* (M.A.Clem.) Szlach. but differing by its larger translucent white flowers with green or brown markings that are held semi-erect rather than nodding, bulbous dorsal sepal with a long decurved filiform point, flat hirsute lateral sepals with long, divergent, filiform free points and, a prominently exserted, thick, dark brown, obovate-spathulate labellum with a small basal lobe and 10-16 long moniliform marginal setae.

Type: Western Australia. Irwin District, 20.5 km from Gunyidi towards Wubin, 4 Oct. 1994, *D.L.Jones 12090*, (holo CANB: iso MEL, NSW, PERTH).

Illustrations: Page 445, Hoffman & Brown (1998), as *Pterostylis* aff. *rufa*. Page 432, Hoffmann & Brown (2011), as *Pterostylis* sp."Arrowsmith". Page 378, Brown, Dixon, French & Brockman (2013), as *Pterostylis* sp. "exserted labellum". It has the phrase name *Pterostylis* sp. exserted labellum (*A.C. Beauglehole 12194*) in FloraBase.

Description: *Terrestrial tuberous herb*, solitary. *Leaves* sessile, 6-15 in a radical rosette, imbricate, green or withered at anthesis; lamina elliptical to obovate, 5-35 mm long, 4-15 mm wide, green; margins entire; apex acute to apiculate. *Scape* 10-20 cm tall, 2-2.5 mm diam., 1-6-flowered. *Sterile bracts* 2-4, closely sheathing, lanceolate, 10-25 mm long, 4-6 mm wide, acuminate. *Floral bracts* ovate-lanceolate, 8-22 mm long, 3-5 mm wide, acuminate. *Pedicels* 5-25 mm long, slender, straight. *Ovary* narrowly obovoid, 4-6 mm long, 1.5-2 mm wide. *Flowers* erect to semi-erect; galea translucent white with green to brown stripes and markings; lateral sepals white with green to brown stripes; petals translucent white with a short green or brown proximal stripe. *Galea* bulbous, hairy, gibbous at the base, curved throughout (sometimes humped), decurved sharply to the apex; petal flanges poorly-developed, not touching; petal margins incurved to flared. *Dorsal sepal* 25-30 mm long including the apical point, cucullate; apical point decurved, filiform, 14-20 mm long. *Lateral sepals* deflexed (often only partly so); conjoined part slightly narrower than the galea, flat, ovate when flattened, 8-12 mm long, 7-10 mm wide; upper margins ranging from curved to nearly square; outer margins flat, with numerous short acicular transparent cilia; sinus relatively narrow, margins hirsute; free points filiform, 12-22 mm long, narrowly divergent, deflexed. *Petals* asymmetrical, ovate-lanceolate, strongly falcate, 12-15 mm long, 3-4.5 mm wide; dorsal margin prominently thickened, brown, hirsute; anterior margin straight, glabrous; proximal flange small; apex acuminate to long-acuminate. *Labellum* prominently exserted above the synsepalum, on a visible claw 1-1.3 mm long, 0.7-1 mm wide. *Lamina* obovate-spathulate, 5.5-6.5 mm long, 2.6-3 mm wide, dark brown, thick, covered with beaded siliceous cells, shallowly concave, strongly constricted in the proximal third; basal lobe small, separated from the main lamina by a neck, narrower than the lamina, with 2-4 projecting setae c. 1.5 mm long; abaxial surface with a narrow central cleft extending nearly to the apex; distal margins with numerous, short, crowded trichomes; apex obtuse, covered with numerous short trichomes. *Labellum marginal setae* projecting forwards to spreading, 10-16, the longest to 4 mm long. *Column* porrect from the end of the ovary, 14-16 mm long, c. 2 mm wide, incurved, greenish brown. *Column wings* rectangular, c. 4 mm long, c. 2 mm wide; upper lobe absent; basal lobe greatly reduced, ovate, strongly ciliate; barrier trichomes irregularly moniliform. *Anther* c. 1.7 mm long, obtuse. *Pollinia* linear, c. 2 mm long, yellow. *Stigma* narrowly scutiform, c. 6 mm long, c. 2.2 mm wide; upper margins irregular. *Capsules* ellipsoid, 10-12 mm long, 4-5 mm wide. **Fig. 1**.

Distribution and ecology: Restricted to south-western Western Australia where occurring in scattered localities extending from north of Eneabba to Hyden. Frequently grows on winter-wet flats under *Eucalyptus loxophleba* in heavy silty or clay loam that becomes spewy when wet and sets like concrete when dry. Also less commonly found in shrubby vegetation near salt lakes and on ironstone breakaways and jump-ups. Altitude: 50-400 m. Flowering: September and October.

Recognition: Characterised by large erect to semi-erect flowers that are translucent white striped with green or brown; a bulbous dorsal sepal with a long decurved point; flat hirsute synsepalum with long, narrowly divergent, dangling free points; and, a prominently exserted, thick, dark brown, obovate-spathulate labellum with a small basal lobe and several long moniliform marginal setae. The species is readily distinguished from others by its erect to semi-erect flowers with the labellum held away from the synsepalum.

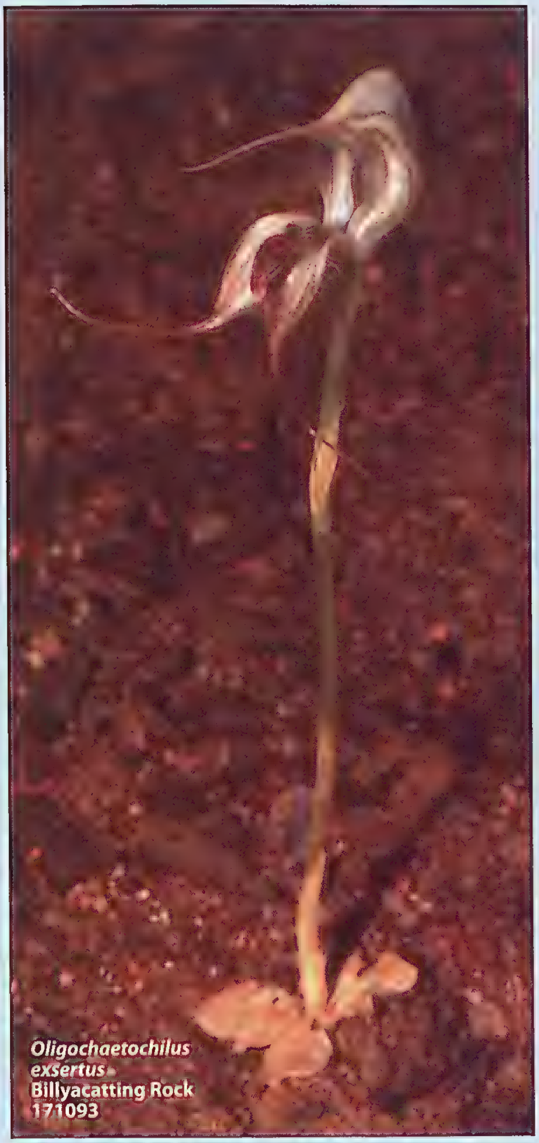
Similar species: *Oligochaetochilus spathulatus*, which is similar, has semi-nodding to nodding, dark brown flowers with translucent areas in the galea, densely hairy sepals, concave synsepalum with upcurved free points, and a thin-textured broadly spathulate labellum that nestles against the surface of the synsepalum.

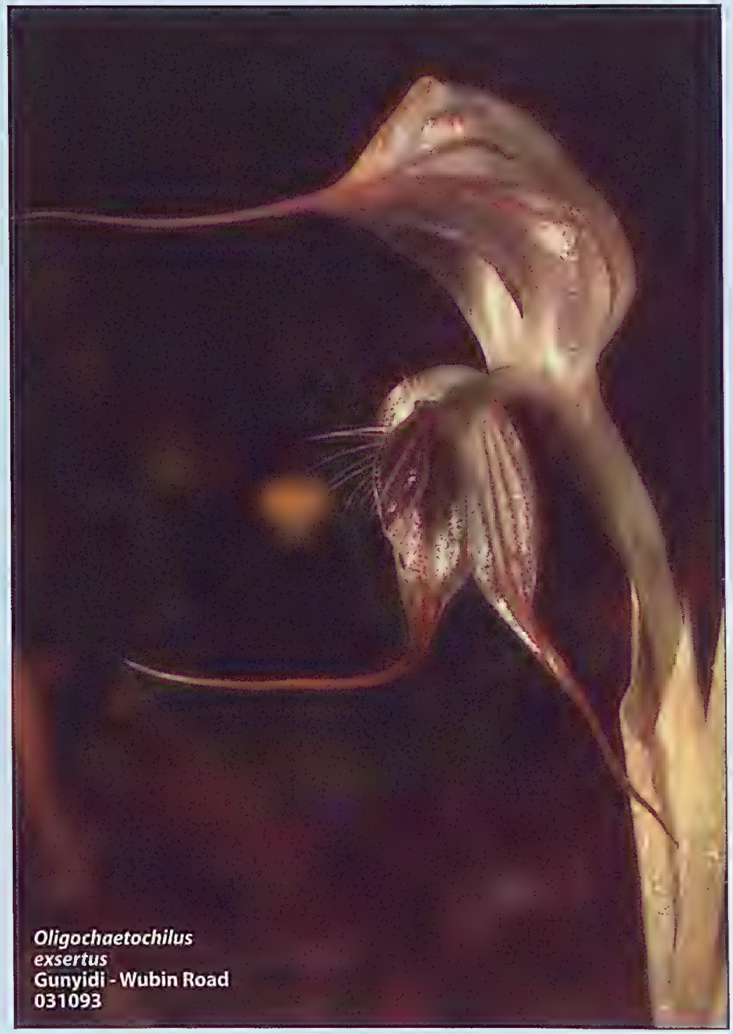
Notes: The new species, which is part of the *Oligochaetochilus spathulatus* complex, is placed in *Oligochaetochilus* section *Spathulata* D.L.Jones & M.A.Clem. (Jones & Clements 2002).

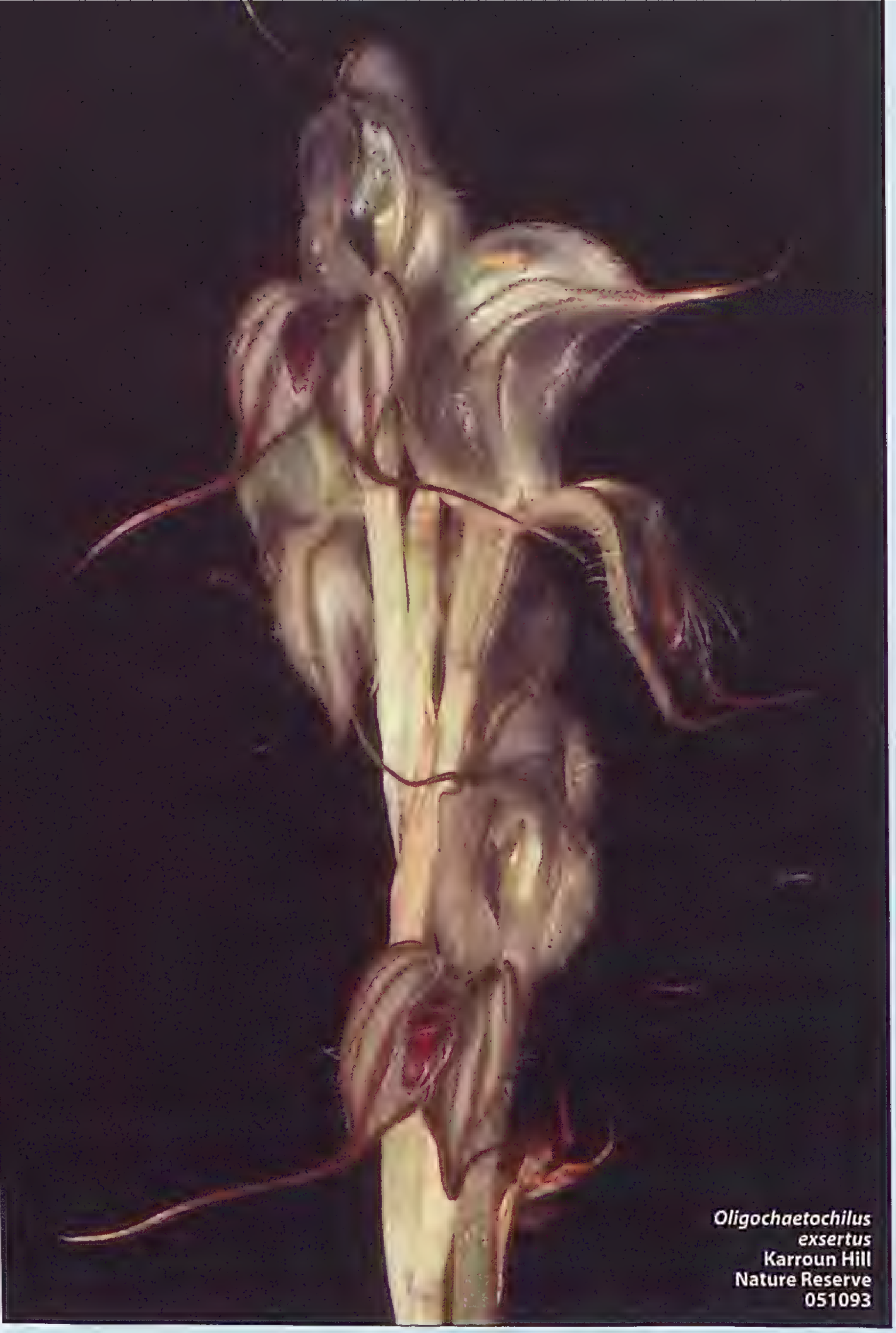
Conservation Status: Widely but disjunctly distributed and conserved.

Etymology: The Latin *exsertus*, extended, protruding, in reference the way the labellum is displayed in front of the lateral sepals.

Other Specimens: WESTERN AUSTRALIA: Kalgarin Hills Nature Reserve, 4 Oct. 1997, *G.Brockman (ORG 922)* (CANB); Carnamah to Eneabba, 7 Sept. 1995, *M.A.Clements 8530* (CANB); Gnarming East, 4 Oct. 1997, *N.Evans (ORG 924)* (CANB); Beekeepers Road, N of Eneabba, 21 Sept. 1995, *C.French (DLJ 14418)* (CANB); Kalgarin Hills, 29 Oct. 2005, *C.French 6470* (CANB); Mia Moon Salt Lakes, 2 Oct. 1991, *D.L.Jones 8105* (CANB); Moora, 4 Oct. 1991, *D.L.Jones 8139* (CANB); Moora, 3 Oct. 1993, *D.L.Jones 12073* (CANB); Gunyidi-Wubin Road, 3 Oct. 1993, *D.L.Jones 12076* (CANB, PERTH); Lake Pinjarrega, 4 Oct. 1993, *D.L.Jones 12079* (CANB); S of Wubin, 4 Oct. 1993, *D.L.Jones 12094* (CANB); 17 km E of Bimbijy Road towards Karroun Hill, 5 Oct. 1993, *D.L.Jones 12112* (CANB); Billyacatting Hill, 17 Oct. 1993, *D.L.Jones 12394* (CANB, PERTH); near Arrow Lake, 4 Sept. 1997, *D.L.Jones 15316* (CANB); Karlgarin Hills Nature Reserve, 1 Oct. 2001, *G.Brockman 746* [b-d], (PERTH); Karlgarin Hills Nature Reserve, 26 Sept. 1998, *G.Brockman GBB 420*, (PERTH); Karlgarin Hills near Hyden-Kondinin Road, 3 Oct 1997, *G.Brockman GBB 360*, (PERTH); Henderer Road, 700 m S of Kondinin-Hyden Road, 3 Oct 1997, *G.Brockman GBB 361*, (PERTH); 6 miles SSE of Marchagee, 38 miles SSE of Carnamah, E side of Geraldton Highway, 25 Aug. 1965, *A.C.Beauglehole, ACB 12194*, (PERTH).


Oligochaetochilus exsertus
Billyacatting Rock
171093


Oligochaetochilus exsertus
Gunyidi - Wubin Road
031093



Oligochaetochilus exsertus
Karroun Hill
Nature Reserve
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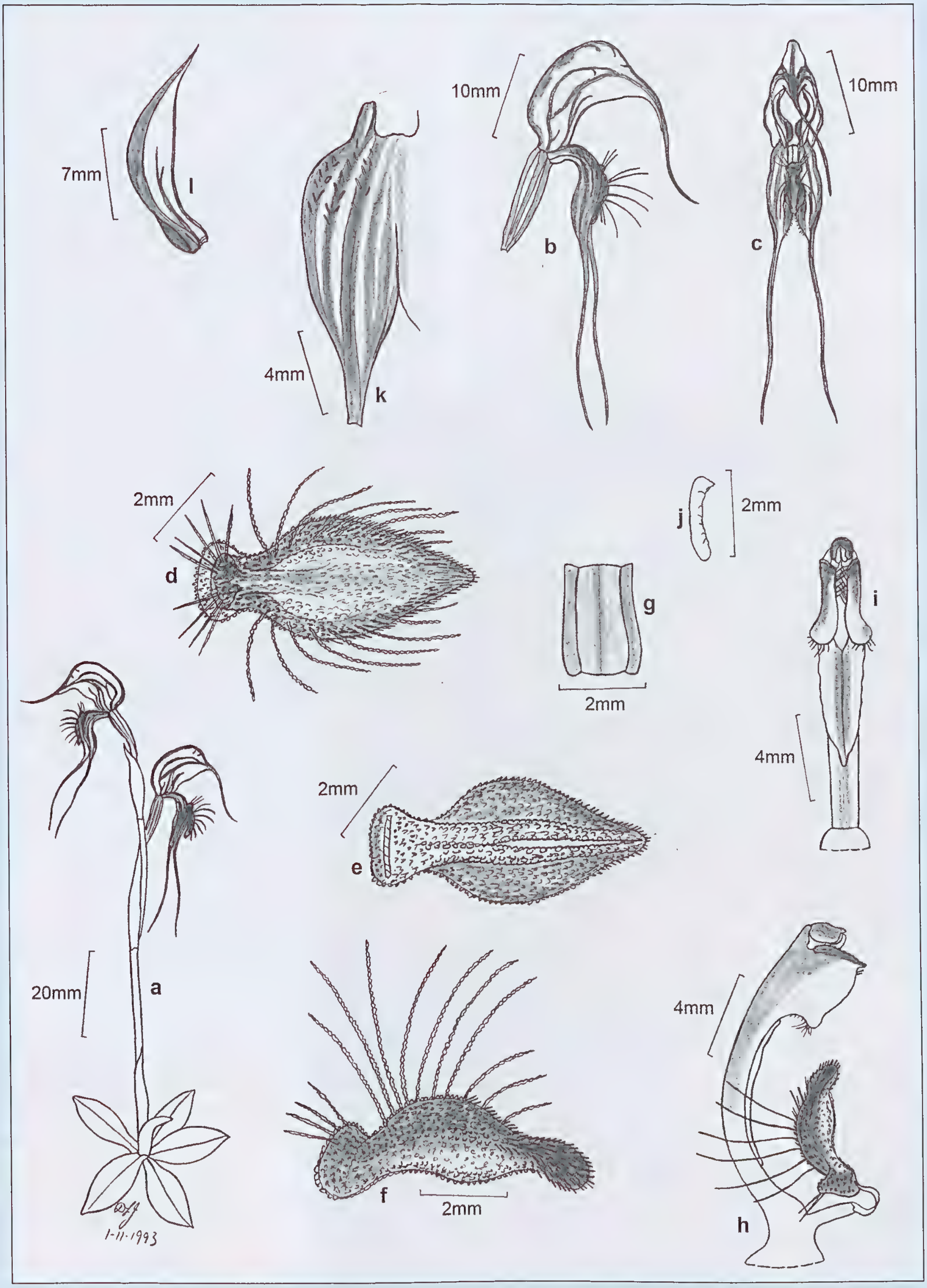


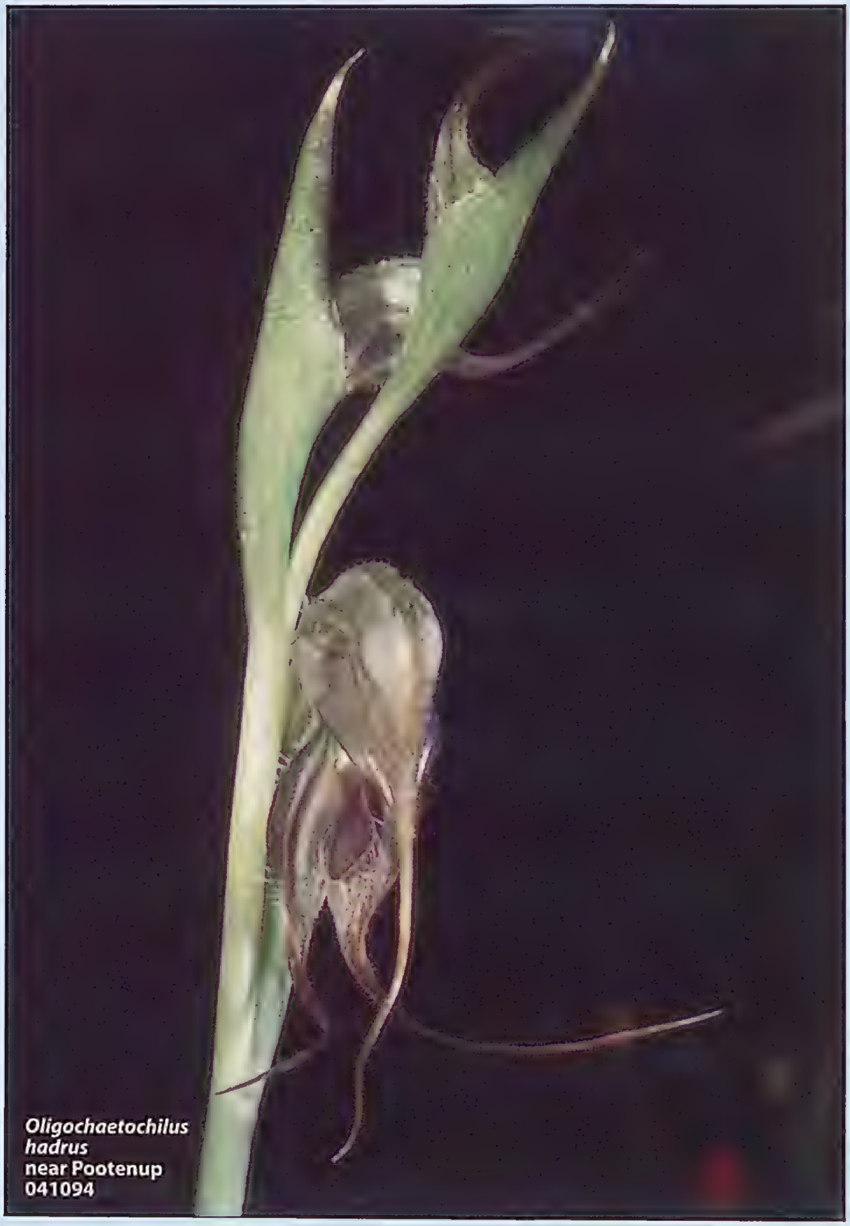
Oligochaetochilus exsertus, Mia Moon Salt Lake, WA, DLJ 8105. **(Fig.1)**
a. flowering plant; b. flower from side; c. flower from front; d. labellum from above; e. labellum from below; f. labellum from side; g. labellum hinge; h. column and labellum from side; i. column from front; j. pollinium; k. part of synsepalum from rear; l. petal.
© D.L.Jones 1 November 1993

2. *Oligochaetochilus hadrus* D.L.Jones, ***sp. nov.*** With affinity to *Oligochaetochilus spathulatus* (M.A.Clem.) Szlach. but differing by glabrous to sparsely hairy flowers, narrower petals that are nearly straight, and a smaller, narrowly elliptic labellum with a vestigial basal lobe and forward-curved moniliform setae.

Type: Western Australia. Pootenup [precise locality withheld], 20 Oct. 1993, *D.L.Jones 12422, et. al.* (holo CANB, iso AD, MEL, NSW, PERTH).

Illustration: None found.

Description: *Terrestrial tuberous herb*, solitary. *Leaves* sessile, 7-14 in a radical rosette, imbricate, usually withered at anthesis; lamina elliptical to narrowly ovate-lanceolate, 5-40 mm long, 5-15 mm wide, green, distinctly veined; margins entire; apex acute to apiculate. *Scape* 12-22 cm tall, 2-3.5 mm diam., 1-8-flowered. *Sterile bracts* 3-5, closely sheathing, lanceolate, 10-35 mm long, 5-8 mm wide, acute. *Floral bracts* ovate-lanceolate, 10-27 mm long, 3-6 mm wide, acuminate. *Pedicels* 5-15 mm long, slender, straight. *Ovary* narrowly obovoid, 4-6 mm long, 1.5-2 mm wide. *Flowers* porrect to semi-nodding; galea translucent white with tan-brown or green stripes; lateral sepals white with tan or green stripes; petals translucent white with a short green or brown proximal stripe. *Galea* bulbous, glabrous or slightly hairy, shallowly curved at the base, middle nearly flat, suddenly decurved to the apex; petal flanges well-developed, touching and closing off the base of the galea, transparent; petal margins not flared. *Dorsal sepal* 25-35 mm long including the apical point, cucullate; apical point decurved, filiform, 15-22 mm long. *Lateral sepals* deflexed, sometimes recurved back towards the ovary; conjoined part wider than the galea, shallowly concave, ovate when flattened, 8-12 mm long, 9-12 mm wide; upper margins spreading; outer margins flat, with numerous short to relatively long acicular cilia; sinus relatively broad; free points filiform, 15-27 mm long, closely parallel, deflexed or hooked forwards. *Petals* asymmetrical, narrowly ovate-lanceolate, 11.5-13.5 mm long, 3-3.5 mm wide; dorsal margin prominently thickened, brownish, glabrous or sparsely hairy; anterior margin flat, glabrous; proximal flange large; apex acuminate. *Labellum* nestling in the synsepalum, on a visible claw 1.5-2 mm long, 1.5-2 mm wide. *Lamina* narrowly elliptic-spathulate, 5-5.5 mm long, 2-2.5 mm wide, brown, thin-textured, covered with beaded and short acicular siliceous cells, shallowly concave, strongly constricted in the proximal quarter; basal lobe vestigial, much narrower than the lamina, without trichomes or setae; abaxial surface with a narrow central cleft extending nearly to the apex, bordered by thick ridges; apex obtuse. *Labellum marginal setae* projected forwards, 6-12, the longest to 3.5 mm long, the distal margins with numerous, short, crowded siliceous trichomes. *Column* porrect from the end of the ovary, 13-16 mm long, c. 2 mm wide, incurved, greenish brown distally. *Column wings* more or less rectangular, c. 4 mm long, c. 2.3 mm wide; upper lobe absent; basal lobe narrowly ovate, ciliate; barrier trichomes irregularly moniliform, protruding. *Anther* c. 1.8 mm long, obtuse. *Pollinia* linear-clavate, c. 2 mm long, yellow. *Stigma* narrowly elliptical, c. 7 mm long, c. 2 mm wide; upper margins irregular. *Capsules* not seen. **Fig. 2.**



Oligochaetochilus hadrus
near Pootenup
041094

Distribution and ecology: Restricted to a single locality near Pootenup in south-western Western Australia. Grows among shrubs and tussocks in open forest in well-drained sandy or gravelly loam. Flowering: September to November.

Recognition: Characterised by porrect to semi-nodding translucent white and green or brown flowers that are sparsely hairy to nearly glabrous; dorsal sepal with a long decurved filiform point; shallowly concave, sparsely hirsute lateral sepals with long forward-projecting parallel filiform free points; narrow nearly straight petals; and, a brown, narrowly elliptic labellum with a vestigial basal lobe and forward-curved moniliform setae.

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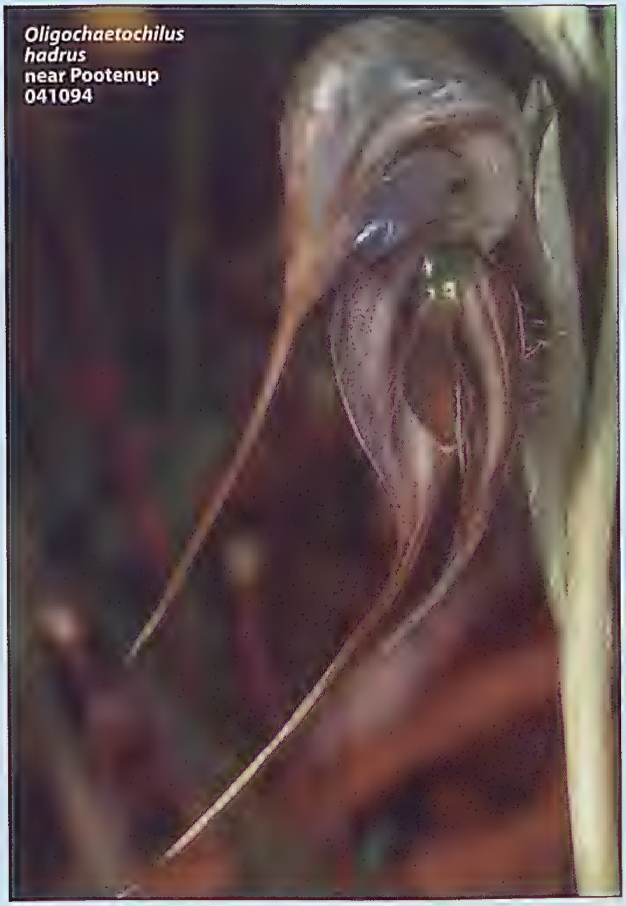
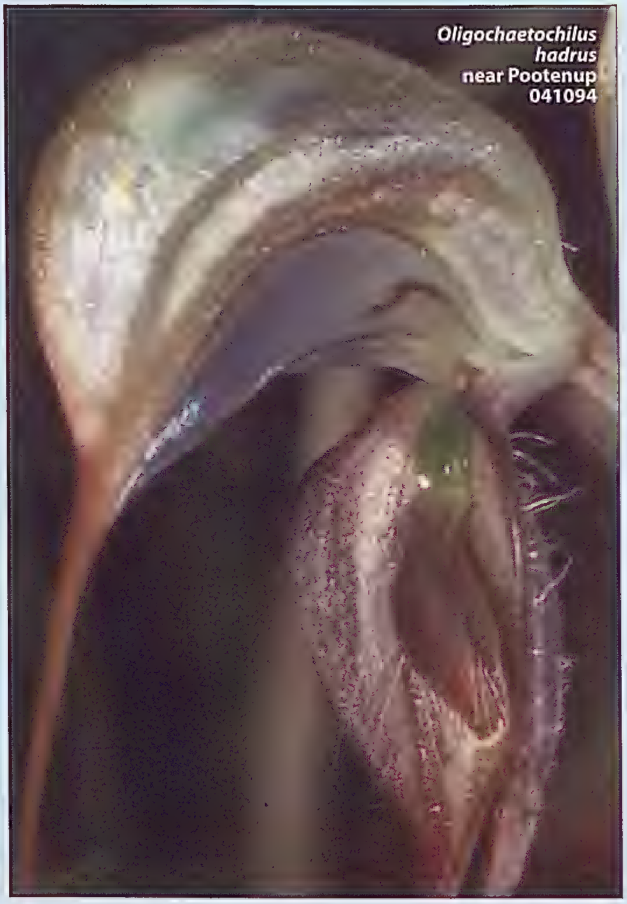

Oligochaetochilus hadrus near Pootenup 041094


Oligochaetochilus hadrus near Pootenup 041094

Similar species: *Oligochaetochilus spathulatus* has larger strongly hairy flowers, broader strongly falcate petals, a broadly spathulate labellum that tapers sharply to a very narrow basal lobe and, widely spreading moniliform setae. *Oligochaetochilus zebrinus*, also described in this paper, is much smaller growing with a thinner scape, fewer (1-4) porrect to semi-nodding prominently striped flowers, flat to shallowly concave synsepalum, broader petals, and a spathulate labellum tapered to a narrow base and with widely spreading moniliform setae.

Notes: This species was brought to our attention by the late Ron Heberle. Being part of the *Oligochaetochilus spathulatus* complex, it is placed in *Oligochaetochilus* section *Spathulata* D.L.Jones & M.A.Clem. (Jones & Clements 2002).

Conservation status: Restricted to a single locality and not found elsewhere despite searching; suggest 2EC by the criteria of Briggs & Leigh (1996).

Etymology: The Greek *hadros*, well-developed, sturdy, strong, in reference to its robust habit.

Other specimens: WESTERN AUSTRALIA: near Pootenup, 11 Oct. 1991, *R.Heberle (DLJ 8450)* (CANB).

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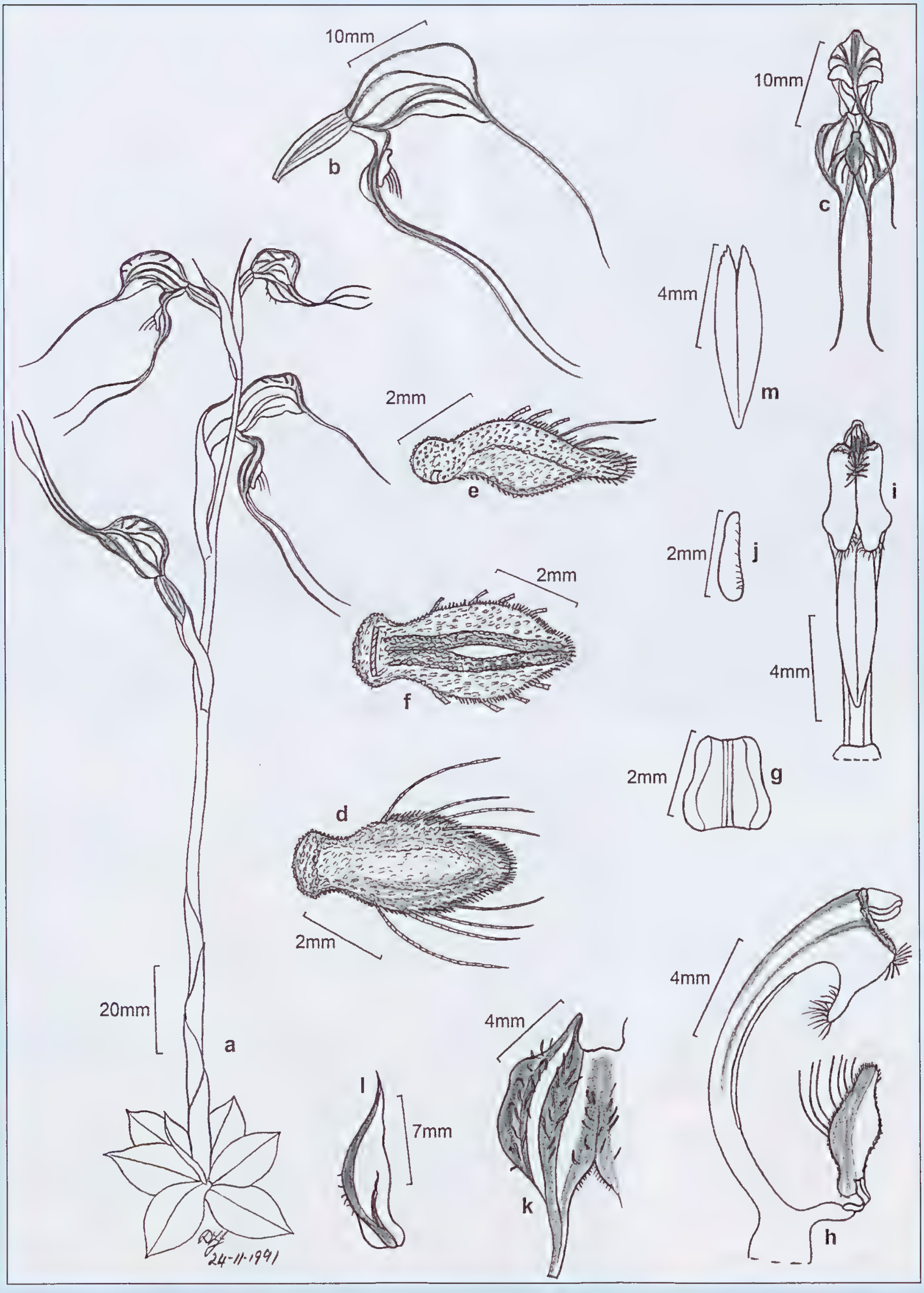


Oligochaetochilus hadrus, near Pootenup, WA, R.Heberle. **(Fig.2)**
a. flowering plant; b. flower from side; c. flower from front; d. labellum from above; e. labellum from side; f. labellum from below; g. labellum hinge; h. column & labellum from side; i. column from front; j. pollinium; k. part of synsepalum from rear; l. petal; m. stigma.
© D.L.Jones 24 November 1991

3. *Oligochaetochilus zebrinus* D.L.Jones, ***sp. nov.*** With affinity to *Oligochaetochilus. spathulatus* (M.A.Clem.) Szlach. but differing by small leaves in a sparse rosette, fewer (1-4), smaller, strongly striped, pale brown flowers, glabrous to sparsely hirsute lateral sepals and, a smaller less hirsute striped labellum with few (6-8) spreading moniliform setae.

Type: Western Australia. Lily McCarthy Rock, 14 Oct. 1993, *D.L.Jones 12351, et. al.* (holo CANB, iso MEL, PERTH).

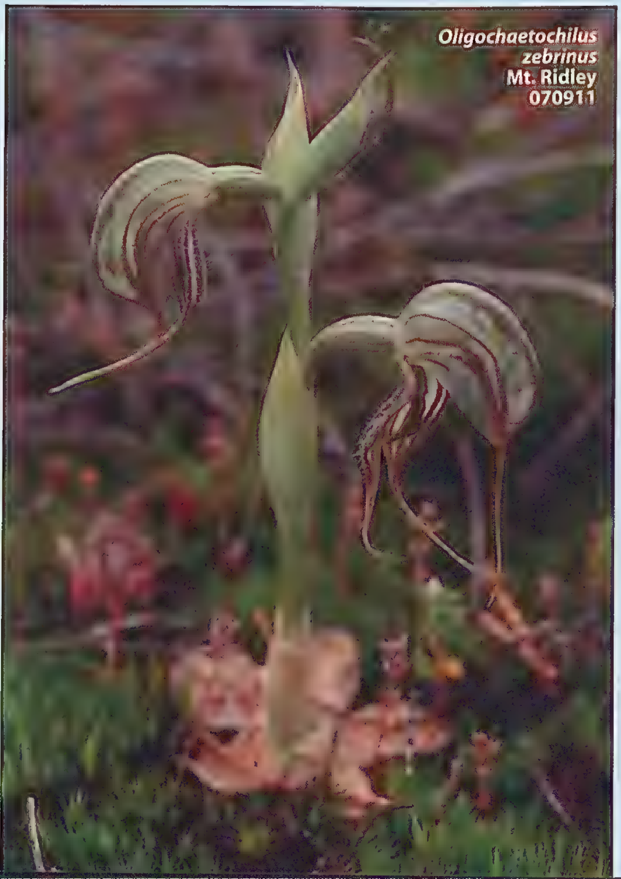
Illustration: Page 450, Hoffman & Brown (1998), as *Pterostylis* aff. *spathulata*. Page 433, Hoffmann & Brown (2011), as *Pterostylis* sp."striped". Page 383, Brown, Dixon, French & Brockman (2013), as *Pterostylis* sp. "striped". It has the phrase name *Pterostylis* sp. striped sepal greenhood *(G. Brockman GBB355)* in FloraBase.

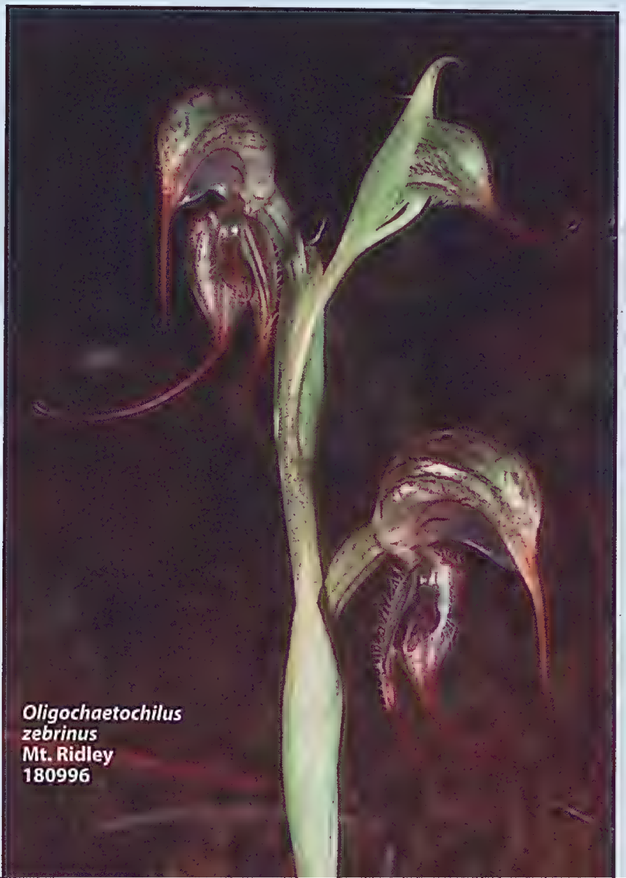
Description: *Terrestrial tuberous herb*, solitary. *Leaves* sessile, 5-8 in a radical rosette, loosely imbricate, usually withered at anthesis; lamina narrowly elliptical to narrowly obovate, 5-35 mm long, 3-12 mm wide, green, distinctly veined; margins entire; apex acute to apiculate. *Scape* 7-18 cm tall, 1-2 mm diam., 1-4-flowered. *Sterile bracts* 2-4, closely sheathing, lanceolate, 10-20 mm long,e, 10-20 mm long, 4-6 mm wide, acuminate. *Floral bracts* ovate-lanceolate, 8-22 mm long, 3-5 mm wide, acuminate. *Pedicels* 5-20 mm long, slender, straight. *Ovary* narrowly obovoid, 4-6 mm long, 1.5-2 mm wide. *Flowers* porrect to semi-nodding; galea translucent white with tan-brown stripes; lateral sepals white with tan stripes and chequered markings; petals translucent white with a short green or brown proximal stripe. *Galea* bulbous, glabrous or slightly hairy, shallowly gibbous at the base, curved throughout, decurved to the apex; petal flanges well-developed, touching and closing off the base of the galea, transparent; petal margins not flared. *Dorsal sepal* 22-30 mm long including the apical point, cucullate; apical point decurved, filiform, 10-17 mm long. *Lateral sepals* deflexed, not usually recurved back towards the ovary; conjoined part slightly wider than the galea, flat to shallowly concave, ovate when flattened, 8-11 mm long, 7-10 mm wide; upper margins nearly square; outer margins flat, with numerous short acicular cilia; sinus relatively broad; free points filiform, 12-20 mm long, closely parallel, hooked forwards nearly at a right angle. *Petals* asymmetrical, ovate-lanceolate, 11-13 mm long, 3-4 mm wide; dorsal margin prominently thickened, brownish, glabrous; anterior margin curved, glabrous; proximal flange large; apex acuminate. *Labellum* nestling in the synsepalum, on a visible claw 1-1.3 mm long, 1.5-2 mm wide. *Lamina* broadly elliptic-spathulate, 5-5.5 mm long, 2-3 mm wide, dark brown, faintly striped, thin-textured, covered with beaded siliceous cells, flat to shallowly concave, strongly constricted in the proximal quarter; basal lobe vestigial, much narrower than the lamina, without trichomes; abaxial surface with a narrow central cleft extending nearly to the apex; apex obtuse, upturned. *Labellum marginal setae* spreading widely, 6-14, the longest to 2.5 mm long, the distal margins with numerous, short, crowded sericeous trichomes. *Column* porrect from the end of the ovary, 12-14 mm long, c. 2 mm wide, incurved, greenish brown distally. *Column wings* more or less rectangular, c. 4 mm long, c. 2 mm wide; upper lobe absent; basal lobe shortly ovate, ciliate; barrier trichomes irregularly moniliform. *Anther* c. 1.5 mm long, obtuse. *Pollinia* linear, c. 1.8 mm long, yellow. *Stigma* narrowly scutiform, c. 6 mm long, c. 2 mm wide; upper margins irregular. *Capsules* not seen. **Fig. 3.**

Distribution and ecology: Restricted to south-western Western Australia where known from scattered localities between Kalgarin Hills west of Hyden and Mt Ridley. Grows in shrubland in well-drained sandy or gravelly loam; also under shrubs around the margins of granite rocks and in shallow soils on granite outcrops; also among rocks on jump-ups and breakaways. Flowering: September to November.

Recognition: Characterised by early flowering period; small, narrow rosette leaves; few-flowered inflorescence; porrect to semi-nodding, distinctly striped, glabrous to sparsely hirsute, translucent white and brown flowers; bulbous dorsal sepal with a long, decurved, filiform apical point; flat or shallowly channelled, hirsute lateral sepals with long, parallel, filiform free points projected forwards; and, a faintly striped, dark brown spathulate labellum with a vestigial basal lobe and a few widely spreading moniliform setae.

Similar species: *Oligochaetochilus spathulatus* has larger rosette leaves, up to 12 semi-nodding, dark brown flowers with translucent areas, densely hairy sepals, concave synsepalum, narrower petals with a long-acuminate apex, and a broader labellum.





Notes: The new species, which is part of the *Oligochaetochilus spathulatus* complex, is placed in *Oligochaetochilus* section *Spathulata* D.L.Jones & M.A.Clem. (Jones & Clements 2002). Specimens from the eastern part of its range tend to have more brightly coloured and less-hairy flowers from those in localities further west.

Conservation status: Widely but disjunctly distributed and well conserved.

Etymology: The Latin *zebrinus*, regularly striped, in reference to floral patterns.

Other Specimens: WESTERN AUSTRALIA: SE of Mt Newmont, 11 Sept. 1996, *C.J.French 198* (CANB); Erayinia Hill, 4 Oct. 1997, *C.J.French 980* (CANB); Mt Ridley, 24 Sept. 2004, *C.J.French 5911* (CANB); Lily McCarthy Rock, 28 Sept. 1991, *D.L.Jones 8019, et. al.* (CANB); Lort River, Loop Road, 9 Oct. 1997, *D.E.Murfet 2914* (CANB); Peak Charles, NW of Esperance. Track to E side of main rock complex to deep gully up rock, 7 Sept. 2007, *G.Brockman 2092*, (PERTH); Mount Ridley, Dempster Road, NNE of Esperance, 24 Sept. 2004, *G.Brockman GBB 1424*, (PERTH); Pederah West Road, W of Church Road, South Karlgarin, 10 Oct. 1998, *G.Brockman GBB 423*, (PERTH); 300 m N of Aylemore Road, Jilikin Flat Rock Road junction, 3 Oct. 1997, *G.Brockman GBB 355 & GBB 356*, (PERTH); Lily McCarthy Rock, 3 Oct. 1997, *G.Brockman GBB 358*, (PERTH).

Acknowledgements

We express appreciation to Anna Monroe and Emma Clifton for help with specimens at CANB; also the directors and curators at CANB and PERTH for giving us access to specimens. Special thanks to Jean Egan for preparing the drawings for publication, Mark Clements for access to photos of type specimens, Marion Garrett and Karina Richards for technical assistance. Thanks also to Garry Brockman, Andrew Brown, Nye Evans, Barbara Jones, Marie French and the late Bill Jackson for companionship on field trips and to the late Ron Heberle for bringing *Oligochaetochilus hadrus* to our attention and providing many spirited discussions on orchids.

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- http://florabase.dpaw.wa.gov.au/ FloraBase, Western Australian Herbarium, Department of Parks and Wildlife, Government of Western Australia. ■

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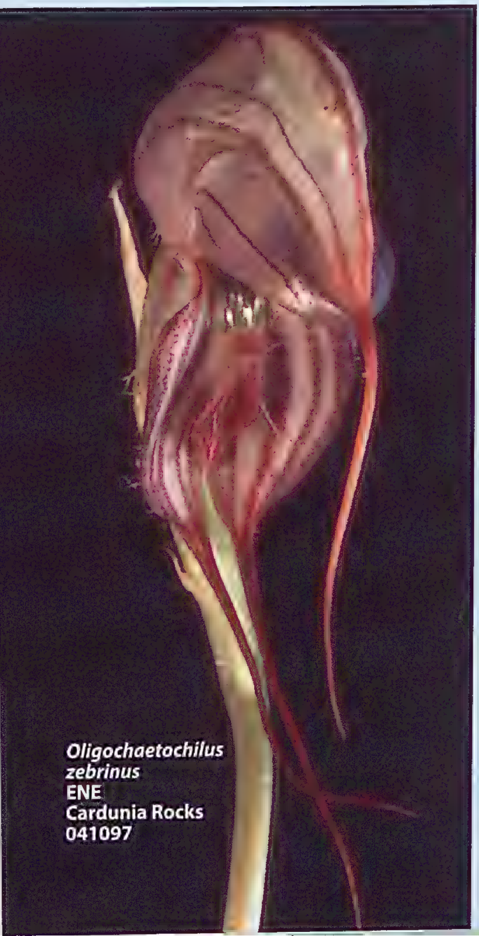

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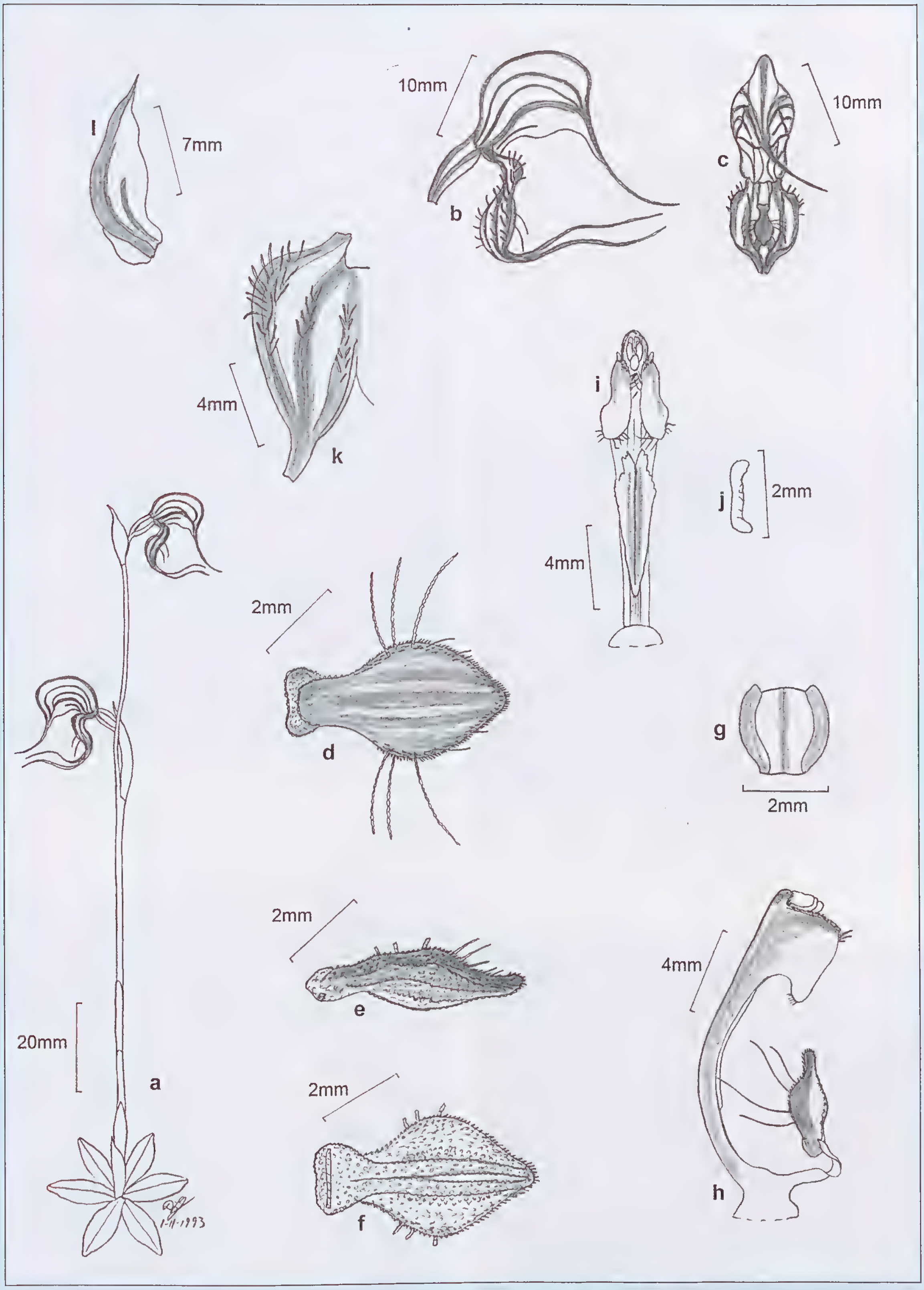


Oligochaetochilus zebrinus, Lily McCarthy Rock, WA, DLJ 8019. **(Fig.3)**
a. flowering plant; b. flower from side; c. flower from front; d. labellum from above; e. labellum from side; f. labellum from below; g. labellum hinge; h. column and labellum from side; i. column from front; j. pollinium; k. part of synsepalum from rear; l. petal.
© D.L.Jones 1 November 1993.

A Burning Question

Text and photos by Alan Stephenson

The title is vexing, as since my involvement with orchids progressed rapidly from merely growing to one of a deepening involvement with conservation I have struggled to rationalise the need to burn large tracts of bushland for the alleged purpose of allowing those who live close to this bushland to feel safe each summer.

As most Australians will be aware, fire is and has been a natural feature for millennia and only since the habitation of our land some 50,000 or more years ago was it burned other than by natural occurrences. It is not possible for the average person to know or understand fire regimes from the past but suffice to say that some time after Australia was inhabited by humans, fire became part of their survival mechanism and those inhabitants were smart enough to observe the results of natural fires and realised they could use fire to their benefit. They emulated natural fire to produce food but burning was undertaken at the same time as natural fires occurred and this was during the periods when natural fires occurred. Fast forward 50,000 years and ask what have we learned from this and it appears we have learned little.

Australia is a continent of which two thirds is classified as desert with regular temperatures of 40°C or more and even at Nowra on the south coast of New South Wales more than one day of 40°C was experienced in the summer of 2013 along with several days close to that.

As the urban areas spread to what once were farming areas of various types surrounded by bushland, bordered by either national parks or flora and fauna reserves the pressure is increased to provide greater security from the incidence of summer fires. All of us will be aware of the rush to develop, beginning with residential development, followed by road construction, water storage, schools, sporting facilities and shopping centres. All of these are allegedly necessary features and are presented to us in the manner a cargo cult mentality but referred to as "infrastructure", the new buzz word of governments.

Above: Burned gumtree with *Cymbidium suave.*

With regular extensions of mainly residential development adjacent to bushland the pressure to provide bushfire protection demands that despite some of these areas being national parks and containing a range of endangered flora and fauna, burning is a required action. My problem is this occurs on a much too regular basis and is counter to what is considered the natural fire regime. This is hot fires during summer but so-called hazard reduction calls for low intensity cool burns and these are undertaken during late autumn to late winter with no regard for what any given area might contain in the way of endangered species. Those charges with the task of undertaking these burns are either the NPWS (National Parks and Wildlife Service) or the Rural Fire Service.

I am aware these burns as far as the NPWS are concerned can only be undertaken after proper planning and if weather certain conditions are suitable. However at these times many terrestrial orchids are in flower or have leaves in preparation for a later spring flowering and as our orchids have evolved over millennia with hot summer fires, a cool autumn/winter burn is the counter to their evolutionary process. I constantly get the comments about people before orchids and I can understand this but there is little or no consideration of the environmental value of an area prior to such burns.

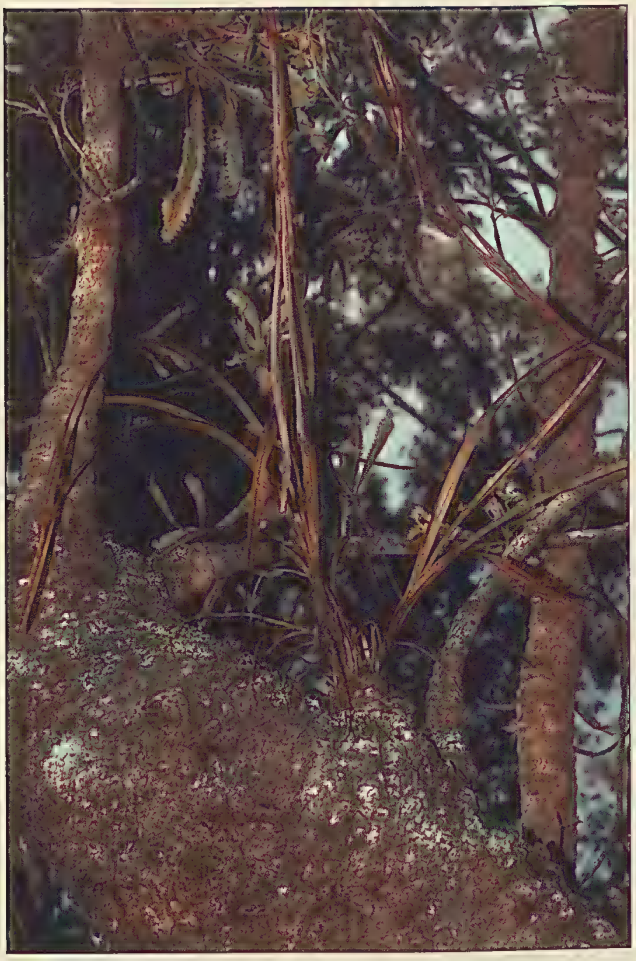
One example of this occurred during the recent bypass of the township of Bulahdelah (in NSW) historically recognised as the home of *Rhizanthella slateri*, the Eastern Underground Orchid. Planned road works would destroy the population but the saving grace was the deployment of three scientists to undertake work to learn more about *Rhizanthella slateri, Cryptostylis hunteriana* and *Corybas dowlingii.* This work determined many unknown features of both species and three years of study also provided suitable sites for plants to be removed from their original locations for translocation to safe sites and this is where the "however" situation occurs.

The area of original occupation of these species underwent a cool-burn as did the area planned for translocation, not once but on more than one occasion, by those who knew what the areas contained and what was planned for them. The however comes in as the body responsible for the burn is considered sacrosanct and free from criticism (not NPWS).

Protection from bushfires comes in the form of an APZ or Asset Protection Zone with the size of the APZ relative to the size of the development and building is prohibited in an APZ.

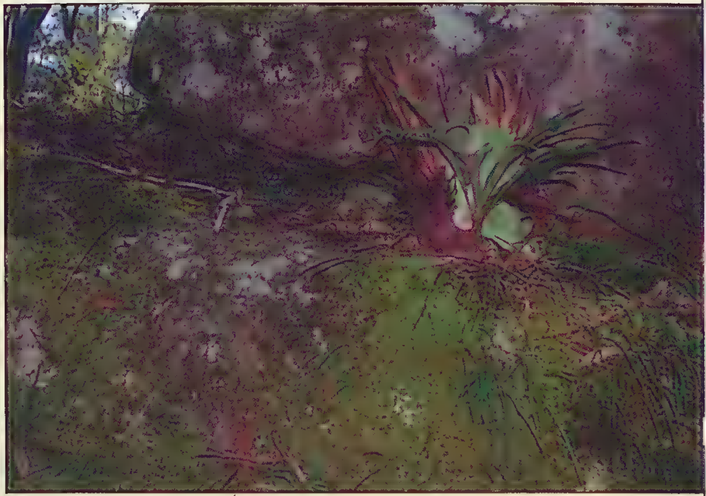
A more recent and more local burn is what prompted this article. It was yet another cool, hazard reduction burn undertaken in May in a National Park. I drove past the area a month after the burn and witnessed the effects of the burn and it was in an area containing several epiphytes and many terrestrial species. In one area the burn appeared to be ideal but being very familiar with that area I know what species were destroyed (at least for one year) and what were unaffected. This area varies from wet forest to sclerophyll and the majority of terrestrial species are from the Cauline Group of *Pterostylis.* The epiphytes are few in variety but plentiful in number and mainly *Sarcochilus hillii* and *Plectorrhiza tridentata* and regardless of forest type *Cymbidium suave* is present in quantity.

I went for a drive to check the area after the hazard reduction burn a month earlier and noted the burn appeared to be concentrated to certain sections and affected these sections in different ways. One section was mainly limited to leaf litter reduction and the terrestrials had produced leaves as the fire was followed by some of the best rain the area had experienced for three months. Unfortunately another section was extensively burned and not limited to leaf litter reduction. Only 100 metres from the main road I noted a hollow tree which had fallen due to the burn. The remnant stump varied from 30cm to 50cm with the tree spread over about 8m and near the top of the tree was a sizeable plant of *Cymbidium suave* with two other sections of this plant in the end of what remained of the trunk. The roots of all portions were exposed, with the lower portions severely blackened as the fire reached almost to the top portion but the tree had fallen before the upper plant could be impacted. My hope is the burned plants will survive and the next few months will reveal success or failure.



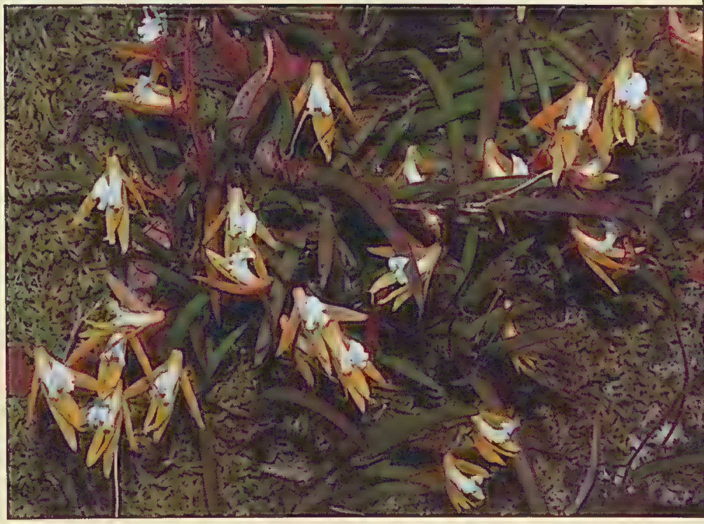
Above: Torched *Cymbidium suave* in *Banksia serrata* after burn-off, both the orchid and its host tree will survive.

Below: *Dockrillia striolata* post fire, it will take a number of years for this colony to recover fully. They are used to coping with quick hot summer fires, frequent "hazard reduction" burns however could wipe out this species.



Above: Elkhorn Fern (*Platycerium bifurcatum*) largely protected in Gorge from fire, with *Dockrillia striolata* underneath.

Below: *Dockrillia striolata* blooming a couple of years before the fires.



The decision was made to rescue the plant rather than allow it to die as it was or become fodder for the local Kangaroo population. Another plant of *Cymbidium suave* in a fallen log about 40m away was intact although the fire had also burned that area. This plant had possibly been there for several years. I am aware of the penalties for removing any natural feature from the bush but I asked myself, did those responsible for the burn know of this very obvious plant, or did they feel it would not be impacted by the burn?

Above: After the hazard reduction burn.

The main point I am trying to make as far as orchids are concerned, is that despite the ravages of a bushfire, non-orchid vegetation and orchids will recover given time. This includes *Dendrobium, Dockrillia, Sarcochilus* other epiphytes and terrestrials in general. However these orchids are adversely impacted by cool out of season burns, especially when conducted on a regular basis and when this is normal practice the numbers of non-orchid native vegetation can also be adversely impacted as some species which require fire for propagation may eventually take over some areas, leading to a monoculture.

WIRES is an organisation of volunteers dedicate to rescuing orphaned or injured animals and caring for them until they can either be returned to their habitat or a suitable home found. I feel my voluntary work is predicated on a similar ethic. It is not the first time I have encountered a similar situation and I am sure it will not be the last but in both instances I would prefer these events were avoidable. ■

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ORCHID SPECIES OF THE SHOALHAVEN

Stephenson, Alan W. 2011

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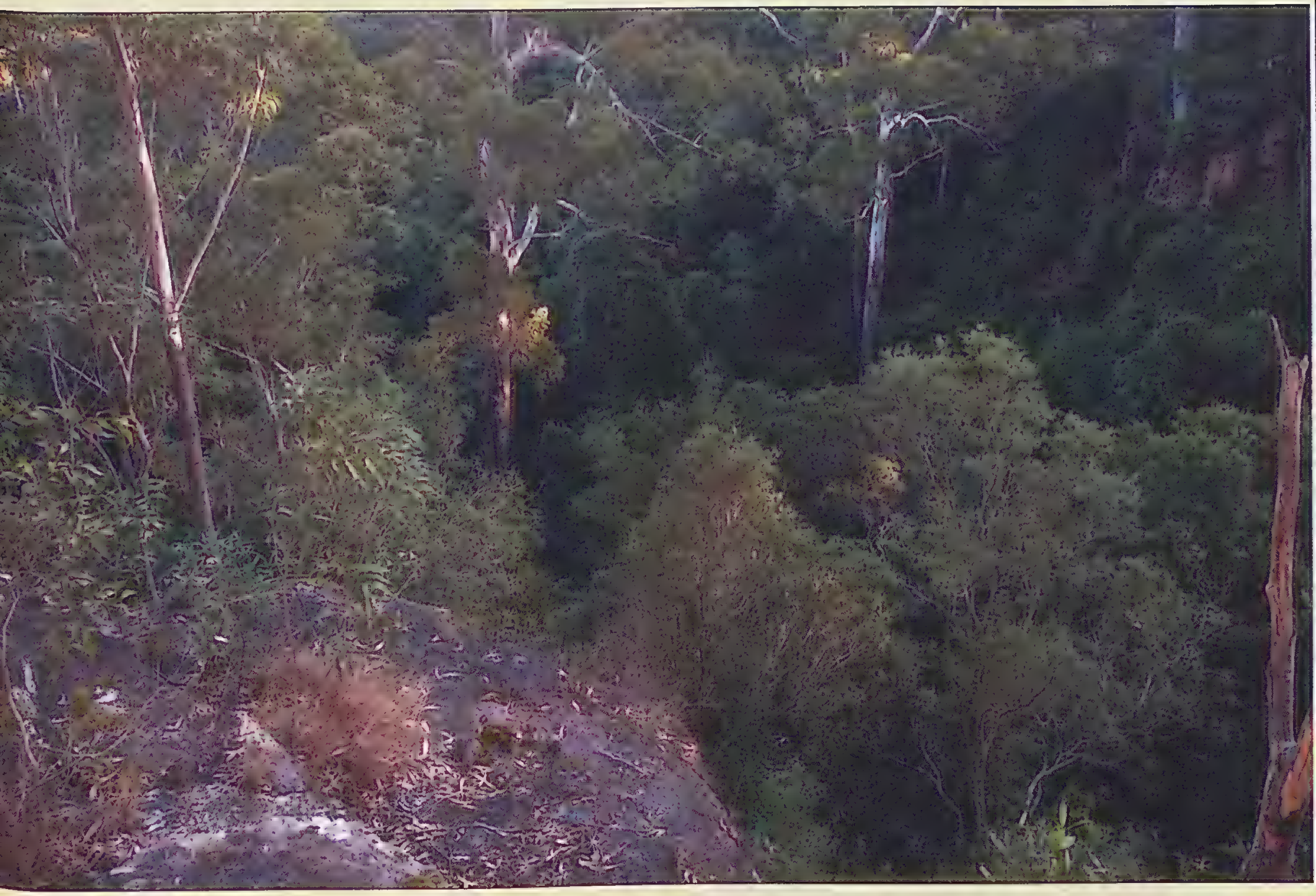
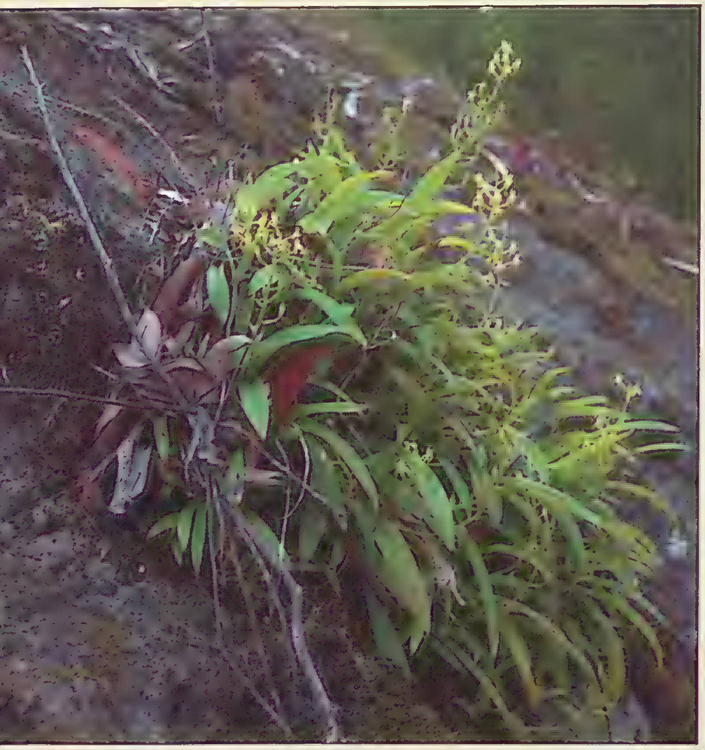


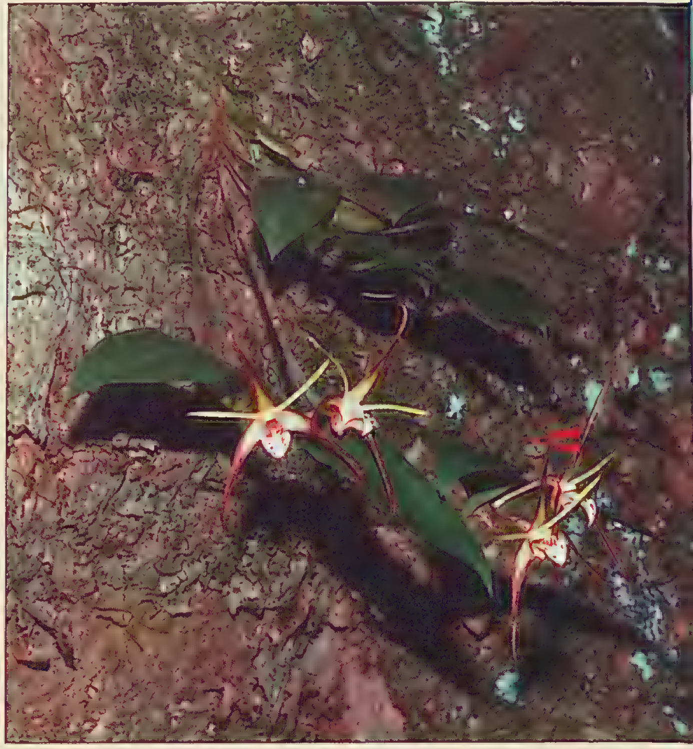
Above: Deep gorges such as this are generally protected from fire, but can encroach on the slopes.

Right: *Sarcochilus olivaceus* pre fires.

Below: *Dendrobium speciosum* (syn. *Thelychiton speciosus*) is a very tough species that will regrow after fire.



Above left: *Liparis reflexa* (syn. *Cestichis reflexa*) has adapted to cope with infrequent summer fires, with its succulent pseudobulbs.



Above right: *Dendrobium tetragonum* (syn. *Tetrabuculum tetragonum*) is killed by fire and generally grows in moist forests which rarely burn.

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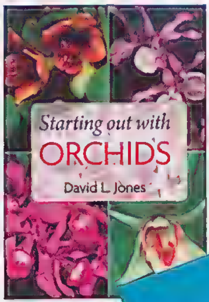

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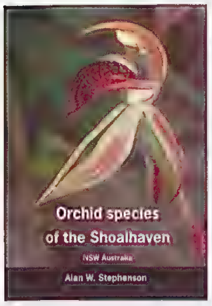

ORCHID SPECIES OF THE SHOALHAVEN: NSW Australia

by Alan W. Stephenson

Alan Stephenson lives in Nowra and is well placed to give the first botanical treatment of the native orchids of the Shoalhaven region. He has extended the distribution ranges of a number of uncommon and rare species, as well as discovering new taxa. This 68 page book is packed with both information and superb photography, almost exclusively taken by the author. All of the recorded orchid species native to the region are included and illustrated.

The introductory chapters discuss the area covered by this book, the structure of the orchid plants, their natural habitats, parts of an orchid flower, orchid structure and the pollination of orchids. This is followed by the main section of the book that alphabetically lists and discusses each species, with information such as Common Names, Recent Synonyms, Flowering Time in the wild, plus a brief description of the plant, flowers and preferred habitat. There are many terrestrial species fully covered as well as a number of epiphytic and lithophytic genera that are found in the area.

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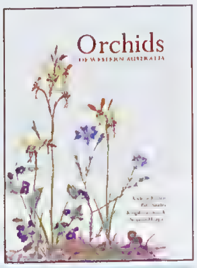

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The Allure of Orchids features an essay by internationally recognised orchid expert Mark Clements, accompanied by a portfolio of illustrations, both historical and modern, of this alluring species. In it you will find works by around 25 artists, including the extraordinarily detailed lithographs of early botanical illustrator Ferdinand Bower, Ellis Rowan's beautiful paintings, the delicate watercolours of Margaret Cochrane Scott, and many more.

The Allure of Orchids is divided into two parts; Terrestrial or ground orchids and Epiphytic or tree dwelling species. Clements says, "These illustrations can be enjoyed simply as works of art and part of our rich and colourful Australian illustrative heritage. But, significantly, they are also part of the scientific record of this country, particularly during the early exploration of the continent."

Interestingly, a lot of the old and traditional Latin botanical names have been used in this work. The author makes a significant number of anecdotal notes and comments throughout the book, to keep the reader fully informed. It is a "must have" book for those interested in Australian orchids and historical botanical art.

159 pages, colour.
284mm x 233mm.
Hardcover.

OUR DISCOUNT PRICE $A34.95 (Incl.GST)
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ORCHID: THE FATAL ATTRACTION

by Anne Ronse

SOLD OUT

The subject of orchids is one close to the heart of many floral designers. some feel it's a privilege to [illegible] these flowers and plants [illegible] how many [illegible] investigate the [illegible] rather than just [illegible] them. The text by Dr Anne [illegible] is informative and enthusiastic and the photography is superlative! It's so good that the flowers literally drip off the pages capturing the imagination and the heart. If you want something special, are addicted to orchids and want to luxuriate in glorious text and images; this is the book for you.

142 pages.
Colour. Hardcover.

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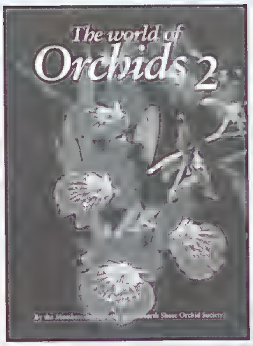

THE WORLD OF ORCHIDS – 2

The World of Orchids – 2 has been written by members and friends of the North Shore Orchid Society about orchids grown in Sydney and its environs, and we are indebted to those people for their time and effort.

It has been produced to cover a large range of genera to help not only the novice, but also the experienced grower in their present fields of interest, and to tempt and encourage them to try other genera.

It should be pointed out that the methods of culture used by the authors are those which they themselves have found successful. Growers should try any changes to their own culture gradually and on a few plants first, as orchids respond differently under different conditions.

80 pages.
Colour and B&W.

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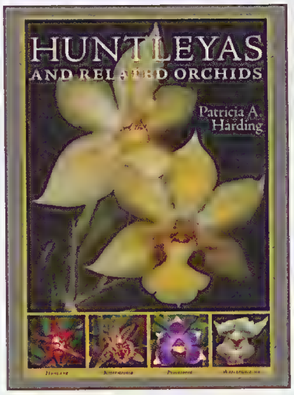

HUNTLEYAS AND RELATED ORCHIDS

by Patricia A. Harding

Revered by avid orchid collectors for its delightful, star-shaped flowers, *Huntleya* is a small group of orchids found low in the forest. *Huntleya* is a small orchid genus that includes fourteen species. They occur in wet cloud forests at medium altitudes of Guatemala, Costa Rica, South America down to Bolivia. The type species *Huntleya meleagris* also occurs in Trinidad. Besides their striking colours — from deep blue to waxy red, royal purple to almost black — flowers of this group are known for their distinctive shapes, patterns, and textures. As appealing as these lovely tropical orchids are, their identification has been confused since the first species was described in the mid-1800s. Recent DNA studies have led to a clearer understanding of relationships and, as a result of this clarity, it is now possible to sort out the taxonomic problems and identify the characteristics that set species apart. In this first book devoted to the *Huntleya* alliance, author Patricia Harding presents evidence from the scientific literature, other growers, and her own experience that will enable orchid enthusiasts everywhere to identify their plants and grow them successfully. Patricia A. Harding is an accredited American Orchid Society judge who has been growing and photographing orchids for three decades.

260 pages, 150 colour photos. Hardcover.

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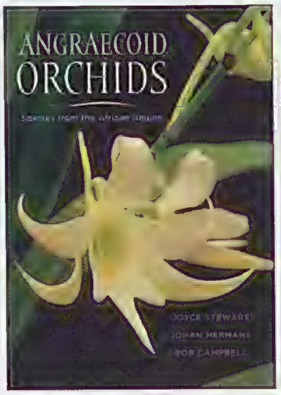

ANGRAECOID ORCHIDS:

Species from the African Region

by Joyce Stewart, Johan Hermans, and Bob Campbell

These so-called 'Jewels of Africa' with their sparkling flowers, distinctive growth habit and floriferous nature are much prized and this account, the first to include the Angraecoid orchids of both Africa and Madagascar, is long awaited. It brings together, in a single volume, descriptions of all 690 species in this intriguing group of orchids and will be the essential reference for all Angraecoid orchid enthusiasts for years to come. Including such horticulturally important genera as *Angraecum*, *Aeranthes*, *Aerangis* and *Jumellea*. Stewart, Herman and Campbell have all spent time in various parts of eastern and southern Africa and precise ecological information relating to habitat, altitude preferences and flowering season of individual plants will be particularly helpful to growers. The diagnostic features of each genus are illustrated and over half the species are accompanied by exquisite photographs taken in both wild habitats and in cultivation.

432 pages,
290 colour photos.
185mm x 265mm.
Hardcover.

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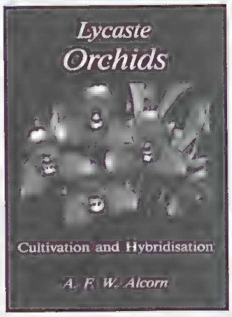

LYCASTE ORCHIDS -

Cultivation and Hybridisation

by A.F.W. Alcorn

Lycaste orchids are easy to grow, and they produce flowers that range from the beautiful to the bizarre. No book previously has provided detailed cultural requirements of the Lycaste, and this book should fill that gap, and encourage new growers to take up the cultivation of this beautiful genus. A section on hybridising contains valuable information on inheritance and genetics that will benefit any hybridiser, not just the grower of Lycastes, as well as helpful hints on how to avoid pitfalls in your hybridising program. Michael Hallett, a friend of Fred Alcorn for a number of years, co-wrote this book with Fred and has completed it posthumously. He has a background in genetics, research and botany, and a passion for plants, especially orchids.

237 pages.
Colour and B&W.

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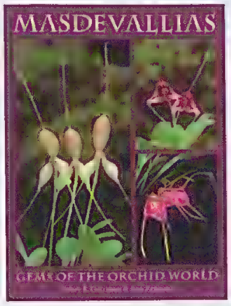

MASDEVALLIAS:

Gems of the Orchid World

by Mary E. Gerritsen and Ron Parsons

For the species orchid enthusiast, cool to intermediate orchid grower, or anyone simply "mad about Masdevallias," this is a first complete reference to these collectible new world orchids. An inspiring tribute to their beauty and a practical guide to their care, the book offers detailed advice on all aspects of culture. For those enthusiasts who are up to a challenge, chapters on propagating, showing, and registering Masdevallias are also included. Ron Parsons is one of the finest nature photographers in the world and has an encyclopaedic knowledge of species orchids, with the genus *Masdevallia* being one of his favourites.

300 pages,
149 colour photos.
190mm x 255mm.
Hardcover.

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2015 AOF ESSAY PRIZE

The AOF Essay Prize is an annual writing competition, established with a generous endowment by the Slade family.

There will be three prizes –

1st Prize	$350.00
2nd Prize	$250.00
3rd Prize	$150.00

The Foundation invites all Australian orchid growers to consider the topic for 2015 and submit an entry. We would like to hear about your ideas and experiences and benefit from them.

ESSAY TOPIC FOR 2015:

"How do you manage your orchid collection without relying on artificial heating and/or cooling?"

Different orchid genera may require warmer or cooler growing conditions than occur where you grow your orchids. Many orchid growers have developed their own ways to provide a cooler and/or warmer environment without resorting to costly alternatives. Let us know how you have overcome this dilemma.

The deadline for receipt of all entries is June 30th 2015

Send your entry

electronically to: aof@australianorchidfoundation.org.au

or to: AOF Essay Prize P.O. Box 322, Essendon North Vic. 3041

Please include your name, address and telephone contact.

Entry Rules:

- This competition is open to Australian residents only
- The essay will be an original article, not previously published
- The essay must be no more than 4,000 words, short essays are most welcome
- The essay is to be in English and typewritten
- Entries may include art work or images
- The authors of the essays will remain undisclosed to the judges, whose decision will be final. If in the opinion of the judges, no worthy essays are received, there will be no award that year
- Non-winning entries will be returned to the sender if requested. These entries may be submitted to the editors of Australian orchid periodicals for publication, with permission from the author
- The winning essay will be announced at the AGM of the Foundation in October 2015
- The winning entry will be published on the AOF website and in Australian orchid periodicals

Australian Orchid Review

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2015 ORCHID EVENTS – *What's on!*

February 22 Hills District Orchids – Autumn Open Day – Northmead, NSW

March 6-8 Queensland International Orchid Fair – Beenleigh, QLD

April 11-12 Collector's Plant Fair – Hawkesbury, NSW

April 17-18 Castle Hill International Orchid Fair – Sydney, NSW

May 8-10 Mothers Day Weekend Spectacular – Port Macquarie, NSW

May 15-17 Orchids Out West – Hawkesbury, NSW

June 27-28 Mingara Orchid Fair & Show – NSW

July 4-5 Tinonee Orchids Open Day & Show (+ Free Workshop) – Taree, NSW

July 24-25 Toowoomba Orchid Society Conference & Show – Toowoomba, QLD

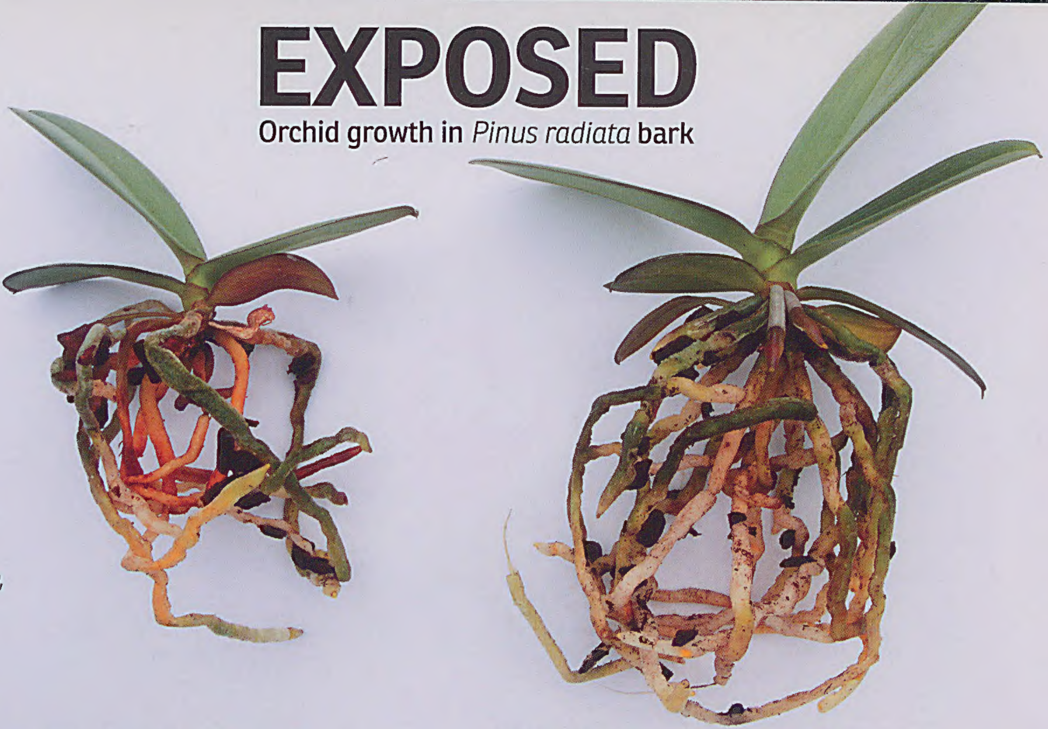
July 26 Hills District Orchids – Winter Open Day – Northmead, NSW

August 1-2 WA Orchid Society – Workshop & Show – Perth, WA

August 14-16 St. Ives Orchid Fair – Sydney, NSW

EXPOSED

Orchid growth in *Pinus radiata* bark



Comparative photo from Orchid growing substrate trial conducted at Lincoln University, New Zealand April, 2012.
(Photo unaltered)

There are several issues with ***Fresh (un-aged) bark,*** of particular concern for newly potted orchids:	Orchiata, ***naturally aged bark*** provides orchid growers significant growing benefits:
PATHOGENS NOT KILLED • some sources of fresh bark contain harmful pathogens • bark is un-aged and pathogens are **not killed** • pathogens can **spread easily** in fresh bark	**INHIBITS / KILLS PATHOGENS** • temperatures exceed 150°F during the aging process • pathogens cannot grow and any present are **killed** • natural colonies of beneficial micro-organisms flourish
PATHOGENS = HIGHER RISK • **fewer beneficial microbes** to resist growth of pathogens • pathogen growth **reduces beneficial microbe population** • pathogens **greatly increase risk of disease** in plants • **more cost and effort** to correct pathogenic growth	**BENEFICIAL MICRO-ORGANISMS RESIST PATHOGENS** • ***Penicillium sp.*** and ***Trichoderma sp.*** are just two of many beneficial microbes, that flourish during the aging process, that **prevent pathogen growth** • Orchiata creates a **healthier environment** for plants
REPELS WATER • natural waxes in fresh bark are **hydrophobic & repel water** • fresh bark **does not** initially hold water & nutrients well • **inferior delivery** of water & nutrients when first potted • increased watering / nutrient requirement means **more cost**	**HOLDS & RELEASES WATER & NUTRIENTS** • aging removes waxes from surface of bark chip, allowing Orchiata to **hold water & nutrients** on outer surface • aged surface provides **instant & consistent rewetting** • excellent delivery of water & nutrients **from day one**
pH TOO ACIDIC AND POOR CHEMICAL BALANCE • fresh bark is **too acidic** for many orchid species • requires **additional expense, time and effort** to correct pH • plant phytotoxic compounds can **suppress plant growth**	**IDEAL pH AND CHEMICAL BALANCE** • Orchiata's **pH 5.5 - 6.5 is ideal** for most orchid varieties • Ideal pH & low EC reduces need for additives or flushing • **aging removes** growth suppressive compounds

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Must be seen in 2015

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February 22 ....Hills District Orchids - Autumn Open Day
Mar 6-8....................Queensland International Orchid Fair - Beenleigh
April 11-12 ....Collector's Plant Fair - Hawkesbury NSW
April 17-18 ....Castle Hill International Orchid Fair - Sydney
May 8-10 ....Mothers Day Weekend Spectacular - Port Macquarie
May 15-17 ....Orchids Out West - Hawkesbury NSW
June 27-28..............Mingara Orchid Fair & Show
July 4-5................TINONEE ORCHIDS OPEN DAY & SHOW
July 26 ....Hills District Orchids - Winter Open Day
August 1-2..............WA Orchid Society - Workshop & Show - Perth
August 7-9..............National Orchid Extravaganza - Dural
August 14-16..........St. Ives Orchid Fair
September 26-27 ....Plant Lovers Fair - Kariong
September 27 ....Hills District Orchids - Spring Open Day
October 2-4 ....Southern Orchid Spectacular - Cronulla
Oct 31- Nov 1 ....Gold Coast - Tweed Orchid Fair
December 6 ....Hills District Orchids - Summer Open Day

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